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ABSTRACT

Progress toward the full participation of minorities in higher education during the past three decades is reviewed. Attention is directed to: the potential pool of qualified high school graduates who could enter postsecondary education; the participation and enrollment rates of minorities; factors related to retention and success in undergraduate programs; and the representation of minorities in advanced-degree programs and the professions. The potential supply of minority students is revealed by population trends, high school graduation rates, and the performance of minorities in elementary and secondary education. Initial college participation rates and recent enrollment trends among minorities are examined for Blacks, Hispanics, Asians, American Indians, and Whites. Data on factors that affect college enrollment are also analyzed, including ethnicity, family income, parents' education, and high school grade average. Of concern are institutional responses to the minority retention problem; academic climate; and values, aspirations, and the student culture. Information is provided on the current status of Blacks and Hispanics in various occupations and the percentage of minority graduates in specific science and engineering fields. (SW)

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FOCUS ON MINORITIES

TRENDS IN HIGHER EDUCATION PARTICIPATION AND SUCCESS

JAMES R. MINGLE

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Executive Officers

Denver, Colorado
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The State Higher Education Executive Officers is a nonprofit, nationwide association of the chief executive officers serving statewide coordinating boards and governing boards of postsecondary education. Forty-nine states, the District of Columbia, Puerto Rico and the Canadian province of Quebec are members.

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FOREWORD

Despite progress since the days of near exclusion, the full participation of minority students in our nation's colleges and universities remains unrealized. In fact, there is strong evidence that we are losing ground.

The minority population in the United States is growing rapidly. Yet participation in higher education among Blacks, Hispanics and other minority groups lags. The result is a growing segment of our population that is effectively removed from contributing productively to the life of the nation. America faces not only a moral mandate but an economic necessity when it seeks to include all of its citizens in a quality postsecondary education.

If this issue is not addressed aggressively with bold policies and persistent commitment, we will not only create a permanent underclass of American citizens but also risk social and economic dissolution that will affect us all.

The intent of this report and a companion study by ECS and SHEEO *(Focus on Minorities: Synopsis of State Higher Education Initiatives)* has been to focus on the importance of the states in achieving the full participation of minorities. We strongly believe that state government can and will provide a leadership role on this issue.

State leadership should not be used as an excuse for federal inaction, however. Need-based assistance through the Pell Grant and other federal programs is essential to maintaining access. The federal government also plays the primary role in collecting and reporting reliable and timely data. We have been greatly disturbed by the lack of current data on enrollments, degrees and other facets of American higher education that provide a portrait of the progress made by minorities. With the enormity of the task facing American higher education in evaluating its success in the recruitment, retention and graduation of minorities, this should no longer be tolerated. Too often the parties involved -- the institutions which collect the data, the states which compile it and the federal government which reports it -- have approached the issue from a "compliance" perspective.

This is not enough. Commitment, not compliance, will be needed to turn the American dream into an American reality.

Patrick M. Callan
Vice President
Education Commission of the States

ACKNOWLEDGMENTS

This study was conducted jointly by the State Higher Education Executive Officers and the Education Commission of the States (ECS). Research and assistance was provided by Marcia Van Der Wege and Jennifer Afton, ECS interns. The author would also like to acknowledge the valuable assistance provided by Polly Baca and Joni Finney of the ECS staff and Diane Yavorsky of the New Jersey Department of Education.

EXECUTIVE SUMMARY

This report reviews the progress toward the full participation of minorities in higher education during the past three decades. It examines: (1) the potential pool of qualified high school graduates available to postsecondary institutions; (2) the participation and enrollment rates of minorities; (3) the factors related to retention and success in undergraduate programs; and (4) the representation of minorities in advanced-degree programs and the professions. In the final chapter, the author concludes that while substantial gains have been made, "progress is distressingly stalled." This fact suggests a need for recommitment from both states and institutions.

Large gaps must be overcome, especially in academic preparation and progression to higher levels on the education ladder. In short, there is enough work to go around for all the partners: parents and students themselves, institutions (particularly their undergraduate faculties), states and the federal government.

HIGHLIGHTS OF THE REPORT:

THE POTENTIAL SUPPLY

- Minorities are a growing proportion of the traditional college-age population. By the year 2025, they are expected to make up nearly 40% of all 18-24-year-olds.
- Minority high school graduation rates have increased significantly in the past 20 years but still lag behind White rates. Hispanics have the lowest rates -- only 62% of 18-24-year-old Hispanics have high school diplomas compared to 83% of Whites.
- The academic preparation of Black and Hispanic high school students continues to lag despite progress in recent years. Data from the National Assessment of Educational Progress (NAEP) reveal that 17-year-old Black and Hispanic students, on average, read only about as well as 13-year-old White students.

COLLEGE PARTICIPATION AND ENROLLMENT

- College participation rates among Black and Hispanic college-aged youth peaked in the mid-1970s and have declined since then.
- Total minority enrollment increased 21% from 1976 to 1984, nearly three times the rate of Whites. However, much of this increase occurred before 1980. From 1980 to 1984, Black enrollment declined, as did that of American Indians.
- Far outpacing other groups, Asian-Americans nearly doubled their 1976 enrollment level by 1984. This fast-growing minority group now makes up more than 3% of total enrollments, compared with their 2% representation in the population generally.
- Except for Asian-Americans, the representation of minorities drops dramatically at the graduate and professional level. Blacks, who make up about 13% of the college-age youth, are 9.5% of all undergraduates and only 4.8% of graduate students.

RETENTION AND SUCCESS

- Only about half of all high school seniors go on to college full-time immediately after graduation. Only half of those enrolling in four-year institutions achieve senior status four years later.

- Students on the "fast track" are those who achieve senior status four years after high school graduation. One of every three Asians in the class of 1980 was on the "fast track," but only one in seven Blacks and one in 10 Hispanics.
- The factors most closely associated with both initial enrollment and later persistence in college are high school grades, family income and parents' education. Students who earn As in high school are 25 times more likely to be on the "fast track" in college than students who earn Cs. Students who come from high-income families are four times more likely to persist than those from low-income families.
- Many minorities begin their education in two-year institutions, and success to the baccalaureate depends on transfer to a four-year institution. National and state studies, however, point to a deteriorating number of transfers from community colleges. This can be caused by high dropout rates, the lack of effective articulation agreements among colleges and roadblocks to accepting credit placed by four-year institutions and accrediting bodies.
- In the 1960s and 1970s, institutions responded to increased numbers of minorities by forming separate counseling and support programs. More recently the trend has been to integrate these services into broader efforts to improve the academic preparation of all students in need of help.
- Anecdotal reports from the campuses indicate that little progress has been made in race relations. Racial and ethnic groups often go their separate ways, creating a climate that may isolate students and reinforce stereotypes. Minority students may become disconnected from the life of the campus, a situation that lessens their retention and success.
- Effective remedial and counseling programs are critical to retention. Yet many programs are poorly funded and receive low priority from institutional leaders.
- The aspirations of students themselves can affect retention and success. States are considering a variety of "mentoring" efforts to raise the sights of minority students.

MINORITY REPRESENTATION IN THE PROFESSIONS

- While the Black middle class has grown substantially since World War II, Black representation among such professional groups as accountants, physicians, college professors, engineers, lawyers and judges is far below their numbers in the population. For example, only about 2.6% of the employed engineers in the nation are Black.
- The Hispanic population is a diverse group consisting largely of Puerto Ricans, Mexican-Americans and Cubans. Even with the relative success of Cuban-Americans, Hispanics remain underrepresented in the professions and overrepresented in low-skill, low-wage jobs. For example, Hispanics make up more than 11% of the teachers' aides but only about 3% of the elementary and secondary school teachers in America.
- The number of minority doctoral recipients has grown substantially in recent years, but the progress of various groups differs significantly. About the same number of Hispanic doctorates are awarded annually as Asian-American, yet the Asian-American population is half the size of the Hispanic population.
- Only about 900 doctorates are awarded to Blacks annually, a number that has declined since the 1970s. While Blacks have diversified their interests in recent years, a majority of doctorates are still awarded in education. Blacks and Hispanics remain severely underrepresented among science and engineering doctorates, greatly limiting the available faculty pool.

REKINDLING THE AMERICAN DREAM

- Minorities cannot achieve full participation without access to institutions, but access is not enough. Successful completion of a demanding, high-quality undergraduate curriculum is the key to minority success.

- The aspirations of American minority youth must be rekindled. No equivalent exists in higher education to the enormously successful "Be All That You Can Be" campaign for military recruitment.
- Social class remains a dominant force in determining access and success in higher education. Looking for evidence of commitment through programs labelled minority often can miss the point. The more important question is: Do the institutions' financial and academic programs and general climate contribute to the success of minorities and other disadvantaged students?
- Public policy must be broader than merely increasing college attendance. With less than 20% of minority youths enrolled in college, postsecondary institutions are partners, not competitors, with industry, the military and other public employment programs.

CHAPTER I: THE POTENTIAL SUPPLY

The potential supply of minority students to postsecondary education can be determined by examining population trends, high school graduation rates and the performance of minorities in elementary and secondary education.

> ***"The press has finally discovered what has been known for 10 years: The majority of elementary school-age children in California are non-White. These children will grow older and become tomorrow's adult population."***
>
> ***-- Harold Hodgkinson[1]***

POPULATION TRENDS, 1950-2050

Population trends provide an important context for examining minority participation in postsecondary education. While the nation's population has been steadily increasing, its composition is shifting dramatically. From 1950 to 1982, the number of 18-24-year-olds

TABLE 1

College-Age Population (18-24), Selected Years 1950-2050

YEAR	TOTAL (in thousands)	WHITE	MINORITY	MINORITY PERCENT
1950	16,075	14,186	1,889*	11.8*
1960	16,128	14,169	1,959*	12.1*
1970	24,712	21,532	3,180*	13.0*
1975	27,735	23,775	3,959*	14.3*
1980	30,081	25,415	4,666	15.5*
1982	30,344	23,074	7,270	24.0
1983	30,054	22,736	7,318	24.3
1984	29,476	22,181	7,295	24.7
1985	28,715	21,491	7,224	25.2
1990	25,777	18,768	7,009	27.2
1995	23,684	16,753	6,931	29.3
2000	24,590	17,062	7,528	30.6
2025	25,447	15,468	9,979	39.2
2050	25,659	14,278	11,381	44.4

SOURCE: 1950-1970: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 311, p. 22; No. 519, Table 1; No. 704, Table 8; No. 880, Table 1; No. 870, Table 1; No. 917, Table 1; as reported in 1986-87 *Fact Book on Higher Education*, American Council on Education, page 4.

1975-1980: *Current Population Reports*, Series P-25, No. 917, Table 1.

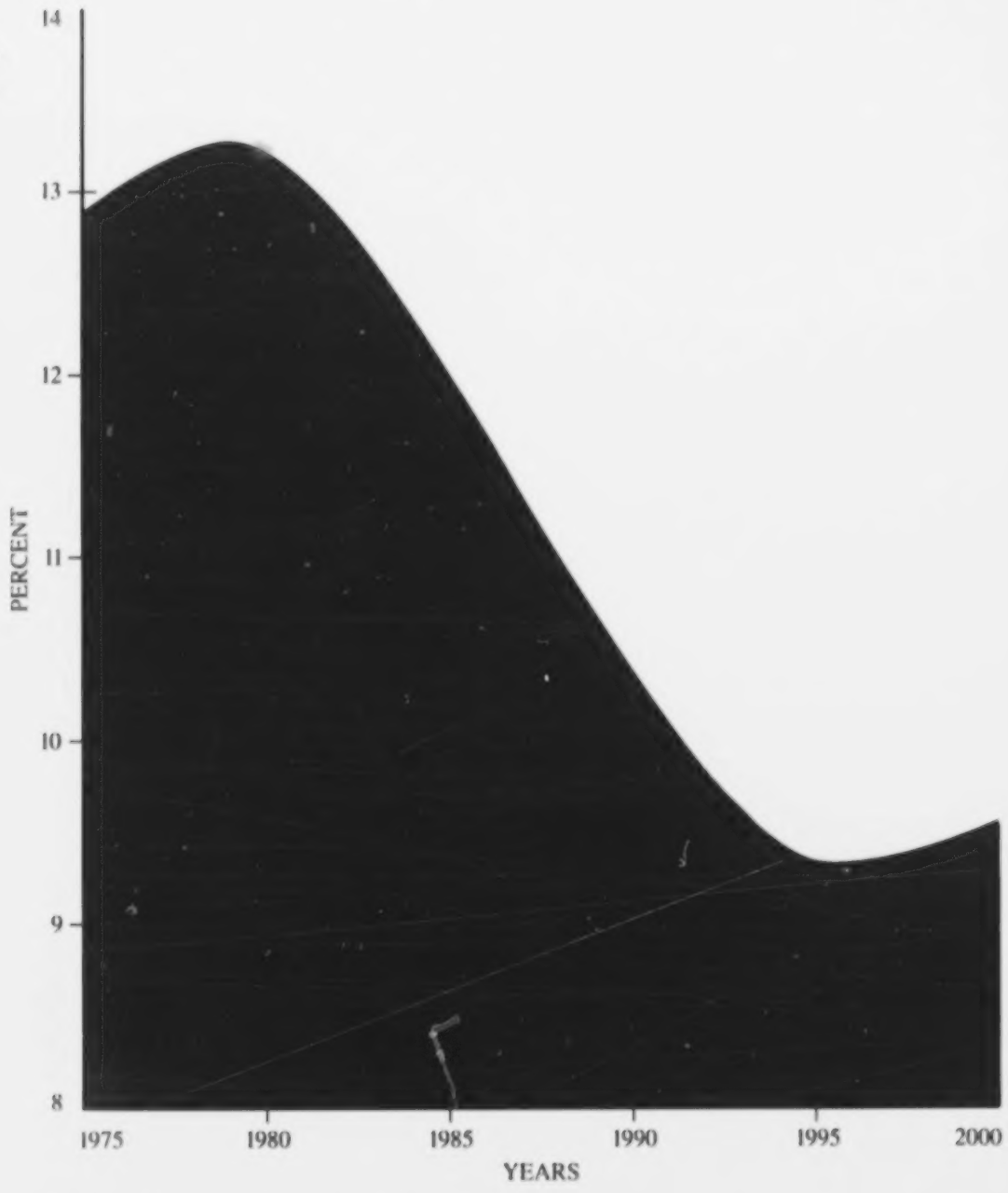
1982-2050: *Current Population Reports*, Series P-25, No. 922, Table 2; No. 995, Table 2.

NOTE: Minority 1982-2050 arrived by subtracting "Spanish-origin" from "White" and redistributing to "Black and other."

*Does not include Spanish-origin population if they were classified as "White" rather than "Black and other" in the survey data.

FIGURE 1

18-24-Year-Olds as Percentage of U.S. Population, 1975-2000



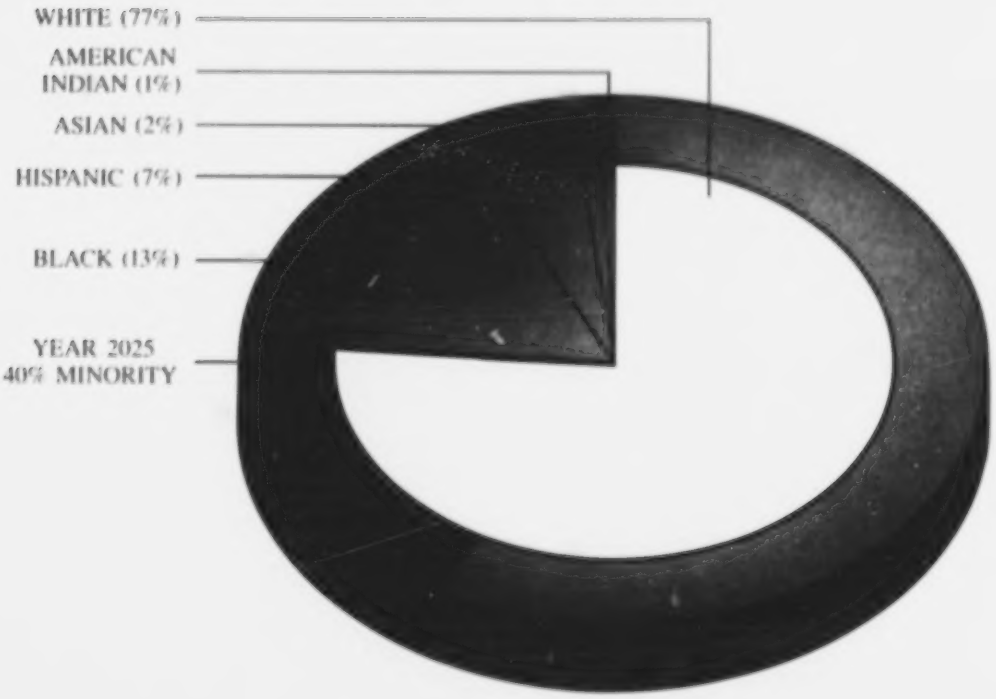
SOURCE: U.S. Bureau of the Census

(traditionally the college-age population) increased in the United States from 16 million to almost 30.4 million (Table 1 and Figure 1). In 1980, the college-age population was approximately 77% White, 13% Black, 7% Hispanic, 2% Asian and 1% American Indian (See Figure 2). The current population decrease is expected to continue to about 1995 when the total college-age population is projected to be 23.7 million (approximately 78% of the 1982 high).

Beginning in the mid-1990s, the college-age population will again increase, so that by the year 2000, the number will be nearly equal the 1970 figure of 24.7 million. The total is expected to increase slowly from 2000 to 2050, reaching about 25.7 million.

In absolute numbers, the minority college-age population also will decrease between 1985 and 1995, but the rate of recovery is expected to be much quicker. By the year 2000, the minority

FIGURE 2
College-Age Population, 1980; Projections to 2025



SOURCE: U.S. Bureau of the Census

18-24-year-old population will exceed the 1983 level of 7.3 million. Then the numbers are expected to increase rapidly to almost 10 million in 2025 and 11.4 million by 2050.

The composition of the college-age cohort is rapidly changing with the minority college-age population increasing its proportion. In 1970, minorities represented approximately 13% of 18-24-year-olds. By 1980, it was more than 15%. If current projections are realized, minorities will make up more than 30% of the college-age population in the year 2000 and nearly 40% in 2025 (see Table 1 and Figure 2).

HIGH SCHOOL GRADUATION PATTERNS, 1974-1985

Nationally, the rate of high school graduation has fluctuated only slightly in the past 10 years. About 82% of the 18-24-year-old population have completed four years of high school. This figure includes those who dropped out and later obtained a high school equivalency certificate (GED) through examination. Given respondent bias, these census figures may be an overestimate of actual high school completion rates.

When completion rates are broken down by race/ethnicity, the pattern does not seem as constant. The rate of high school completion for Whites increased from 1972 to 1985 by only 1% (to 83%), while Black graduation patterns have shown a marked increase. In 1968, only 58% of Black 18-24-year-olds had completed four years of high school. By 1985, that rate had risen to 75% (Table 2).

Among Hispanics, the 1985 high school completion rate was 62%, well below Black and White rates (Table 2 and Figure 3). Hispanic rates actually declined from 1976-1980 but have risen significantly since then.

American Indians are graduating from high school at a 60% rate, which is significantly lower than White rates but is up from their 1970 level of 51%.[2]

Census data also reveal that more Blacks and Hispanics than Whites are still completing their secondary education at ages 18 and 19. Only 40% of 18- and 19-year-old Hispanics have completed high school, compared with 51% of Blacks and 64% of Whites.[3] Many minorities apparently close the gap either by graduating late or earning high school equivalency certificates after dropping out.

TABLE 2

High School Graduation Rates,* 1968-1985

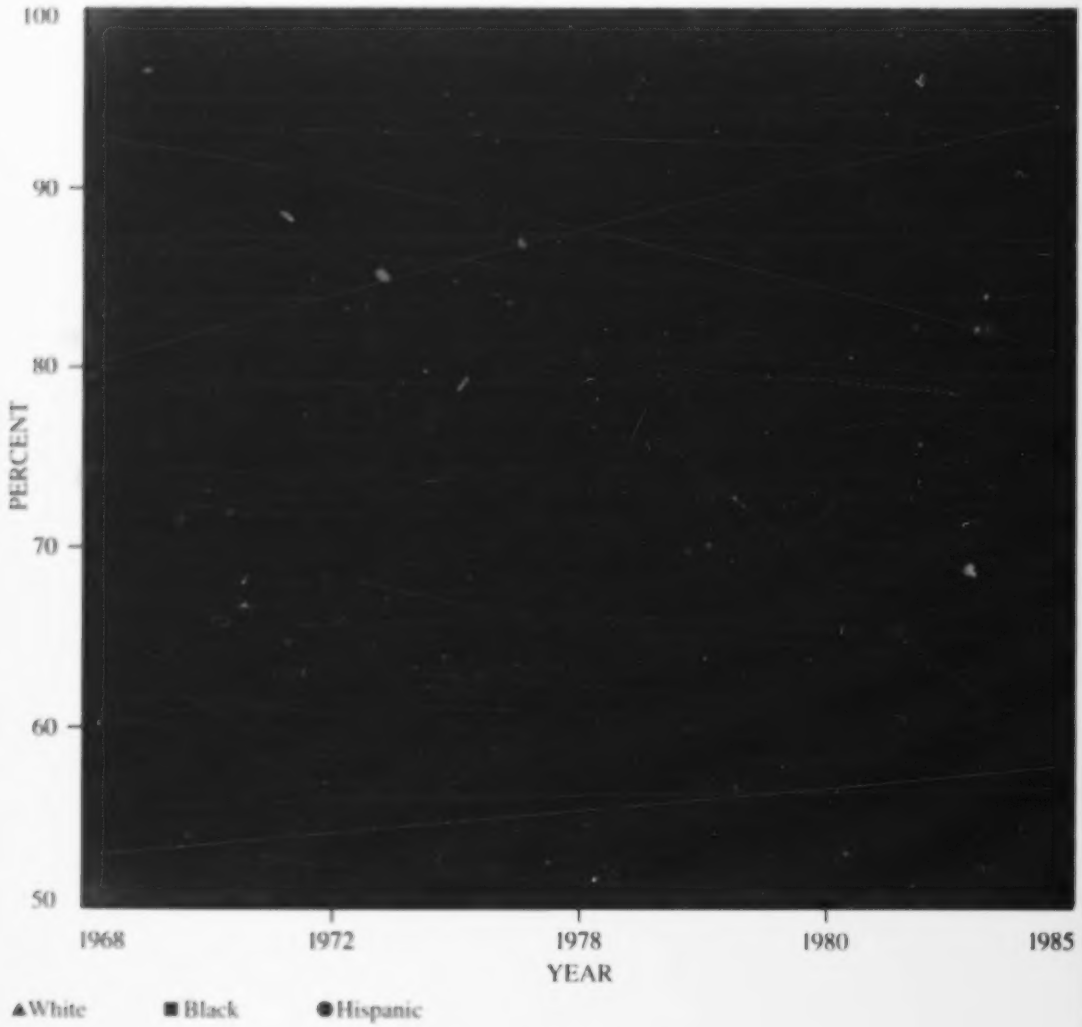
YEAR	WHITE	BLACK	HISPANIC
1968	79%	58%	—
1972	82	67	52%
1976	82	67	56
1980	83	70	54
1985	83	75	62

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 404 and No. 409.

*Persons 18-24 years old reporting four or more years of high school.

FIGURE 3

High School Graduation Rates,* 1968-1985



SOURCE: U. S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 404 and No. 409.

*Percentage of the 18-24-year-old population with four years of high school

	ALL SUBJECTS	ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	FOREIGN LANGUAGE	COMPUTER
Total	21.8	3.8	2.6	2.1	3.1	1.1	.1
White	21.9	3.8	2.7	2.3	3.1	1.1	.1
Black	21.1	3.8	2.4	2.0	2.9	.7	.1
Hispanic	21.7	3.7	2.2	1.8	3.0	.8	.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The Condition of Education*, annual, 1986. As reported in *Statistical Abstracts of the United States 1986*, 106th Edition, U.S. Department of Commerce, Bureau of the Census, Table 243, p. 146.

TABLE 3

Average Number of Carnegie Units Earned by High School Graduates by Subject Area, 1982

SCHOOL PERFORMANCE

Since 1971, NAEP has been charting the changes in the reading, science, mathematical and, more recently, the writing abilities of school-age children. By sample testing 9-, 13- and 17-year-olds, NAEP has provided an excellent picture of the changes in educational achievement.

An analysis of reading performance trends from 1971 to 1984 shows that students at all three ages were reading better in 1984 than in 1971. Moreover, Black and Hispanic students made dramatic improvements during the period. Despite this progress, the gap between minority and White student performance remains substantial. Seventeen-year-old Black and Hispanic students still read only about as well as 13-year-old White students.[4] (It is important to note that averages never reflect the range of proficiency of any population and that minorities can be found at all levels of the continuum.)

The NAEP reading assessment categorizes reading skills as rudimentary, basic, intermediate, adept and advanced. Black 17-year-olds, for example, "have shown improvements in the proportion acquiring both basic (13 percentage points) and intermediate (25 percentage points) reading skills, while the percemage with adept reading skills has more than doubled." Nevertheless, only 16% of Black 17-year-olds demonstrated "adept" reading skills, compared to 45% of the White students of this age.[5]

The percentage of "adept" Hispanic readers is up significantly as well, rising to about 20% of all 17-year-olds in 1984. The NAEP report attributes these gains to educational programs developed in the late 1960s and 1970s targeted at students who learned Spanish as their first language.[6]

The data for Blacks also support the notion that a good start in school translates into an advantage which is sustained. The report indicates that students born in 1965, 1966 and 1967 performed better than students born in 1961, 1962 and 1963 at every age at which they have been assessed. This may be because of Head Start and Title I programs of the Elementary and Secondary Education Act of 1965 that were available to the younger cohort.

In NAEP reports on the writing abilities and skills of school-age children, the racial differences are also starkly apparent. Black and Hispanic students perform at substantially lower levels than do Whites and Asian-Americans. "Indeed, the writing achievement of 11th-grade Black and Hispanic students is below that of 8th-grade White students,"[7] NAEP found.

The lower academic achievement of minorities also is reflected in the number and type of courses they take. The average number of Carnegie Units earned for all subjects by high school graduates in 1982 was 21.8 (Table 3). White graduates were slightly higher at 21.9, followed by Hispanics at 21.7 and Blacks at 21.1 units.

With the exception of English and computer courses, Blacks not only earned fewer total units, but also fewer units in academic subjects -- math, science and social studies -- than the typical high school graduate in 1982.

Hispanics earned more units than Blacks, but not in academic subjects. Hispanics earned fewer academic units than the total graduating population in all areas except computer courses.

The explanation for the differences in Carnegie Units earned may be in the system of educational tracking in high school. Students traditionally are guided toward vocational, general or college-preparatory courses. As of 1980, approximately half of Black seniors reported they were in the college preparatory track. For Hispanics, the figure was only 37.3%, compared to 65.3% for Whites (Table 4).

	GRADE-POINT AVERAGE	EDUCATION TRACK (PERCENT)		
		VOCATIONAL	GENERAL	COLLEGE PREP
Black	2.6	24.5	23.8	51.7
Hispanic	2.6	28.6	34.1	37.3
Low-SES White	2.8	28.6	35.0	36.3
High-SES White	3.0	14.0	20.8	65.3

TABLE 4

High School Performance and Track of 1980 Seniors

SOURCE: Valerie Lee, *Access to Higher Education: The Experience of Blacks, Hispanics and Low Socio-Economic Status Whites*. American Council on Education, 1985, p. 51.

VERBAL

	1976	1977	1978	1979	1980	1981	1982	1983	1984
American Indian	388	390	387	386	390	391	388	388	390
Asian-American	414	405	401	396	396	397	398	395	398
Black	332	330	332	330	330	332	341	339	342
Mexican-American	371	370	370	370	372	373	377	375	376
Puerto Rican	364	355	349	345	350	353	360	358	358
White	451	448	446	444	442	442	444	443	445
Other	410	402	399	393	394	388	392	386	388
All	431	429	429	427	424	424	426	425	426

MATHEMATICS

	1976	1977	1978	1979	1980	1981	1982	1983	1984
American Indian	420	421	419	421	426	425	424	425	427
Asian-American	518	514	510	511	509	513	513	514	519
Black	354	357	354	358	360	362	366	369	373
Mexican-American	410	408	402	410	413	415	416	417	420
Puerto Rican	401	397	388	388	394	398	403	403	405
White	493	489	485	483	482	483	483	484	487
Other	458	457	450	447	449	447	449	446	450
All	472	470	468	467	466	466	467	468	471

TABLE 5

Average SAT Scores by Ethnic or Racial Groups, 1976-1984

SOURCE: Lawrence Biemiller, "Black Students' Average Aptitude Test Scores Up 7 Points in a Year," *The Chronicle of Higher Education*, January 16, 1985, p. 17. As reported in *Minorities in Higher Education*, 4th Annual Status Report, 1985, American Council on Education, p. 20.

Regardless of track designated, the same group of 1980 high school seniors showed differences in grade-point average (GPA). Blacks and Hispanics earned a GPA of 2.6, which was lower than either low socio-economic status (SES) Whites at 2.8 or high SES Whites at 3.0 (Table 4).

Another measure of high school performance in addition to the GPA is the Scholastic Aptitude Test (SAT). Scores on the SAT may be affected by many factors, including academic track and GPA. The SAT is often used to predict college performance based on academic preparedness. In general, scores on the SAT have declined since 1976 (Table 5). In each year, Whites have scored higher than the average on the verbal portion, while the minority groups scored below the average. Among the minority population, Asian-Americans consistently ranked second to Whites, followed by American Indians, then Hispanics. Blacks scored the lowest.

The mathematics portion of the SAT also showed consistent results. However, the Asian-American students scored above the national average, with Whites placing second and also above the average. Other minority groups performed relatively the same with American Indians, then Hispanics and finally Blacks scoring below the average between 1976 and 1984 (Table 5).

On the positive side, Black and Hispanic groups have made gains on both their verbal and math scores during the past decade at a time when all SAT scores were dropping.

Researchers examining results of the American College Testing program have found the number and type of courses that minority students take in high school have a significant influence on their test scores. This is especially true on the mathematics and natural science tests.[8] In short, the more college preparatory courses in the subject area, the higher students score on the test.[9]

CHAPTER 1 NOTES

1 Harold Hodgkinson. Presentation to a symposium on "The Future of Higher Education," presented by the Western Interstate Commission for Higher Education (WICHE), Denver, Colorado, December 4, 1985, p. 8.

2 Judith E. Fries. *The American Indian in Higher Education, 1975-76 to 1984-85*, National Center for Education Statistics, U.S. Department of Education. Washington, D.C.: U.S. Government Printing Office, March 1987, p. 1.

3 U.S. Bureau of the Census. *Current Population Report*, Series P-20, No. 404 and No. 409.

4 National Assessment of Educational Progress. *The Reading Report Card: Progress Toward Excellence in Our Schools, Trends in Reading Over Four National Assessments, 1971-1984* (NAEP Report No. 15-R-01). Princeton, New Jersey: Educational Testing Service, 1984, p. 7.

5 *Ibid*, p. 36.

6 *Ibid*, p. 38.

7 National Assessment of Educational Progress. *The Writing Report Card: Writing Achievement in American Schools* (NAEP Report No. 15-W-02). Princeton, New Jersey: Educational Testing Service, 1986, pp. 45-46.

8 James Maxey, Samuel Cargile and Joan Laing. "Three Measures of Academic Achievement and Their Association with Performance on the ACT Assessment," *Journal of the National Council of Educational Opportunity Associations*. February 1987, p. 6.

9 For example, low-income Black high school seniors in 1985 averaged 10.4 on the mathematics section. However, among those who had five courses in mathematics, the average increased to 14.8. For more complete analysis see Maxey, Cargile and Laing (1987, p. 9).

CHAPTER II: PARTICIPATION AND ENROLLMENT

The number of minorities flowing through the postsecondary pipeline is affected not only by the size of the pool of qualified minority high school graduates but also by the rate at which they enroll in college and continue to higher levels. This chapter examines both initial college participation rates and recent enrollment trends among minorities.

COLLEGE PARTICIPATION RATES

The rate at which students enroll in college is often the subject of great confusion. The longitudinal study of the high school class of 1980 (known as the "High School and Beyond" study)[1] and its subsequent follow-ups in 1982 and 1984 reveal that about 50% of high school seniors enrolled in some form of postsecondary education (including short occupational programs) in the fall following graduation. Within two years of graduation, more than two-thirds attended some form of postsecondary institution.[2]

College participation immediately after high school differed significantly among racial and ethnic groups. Asian-Americans had the highest college attendance rates (70%), followed by Whites (51%), Blacks (46%), American Indians (38%) and Hispanics (37%) (Figure 4).

Another measure of participation can be found in the annual school enrollment surveys done by the U.S. Census in its *Current Population Reports*. In any given October when the survey is conducted, approximately one-third of high school graduates 18-24 years old are enrolled in college. As Figure 5 and Table 6 reveal, the White participation rate has remained relatively stable since 1968, hovering between 32-34%. (It was high in 1968 because of reductions in the size of the "civilian" population due to the military draft and the Vietnam War.)

Black and Hispanic rates, however, have been more volatile, peaking in 1976, declining steadily since that time. Currently, 26% of Hispanic and Black high school graduates (aged 18-24 years) are enrolled in college.

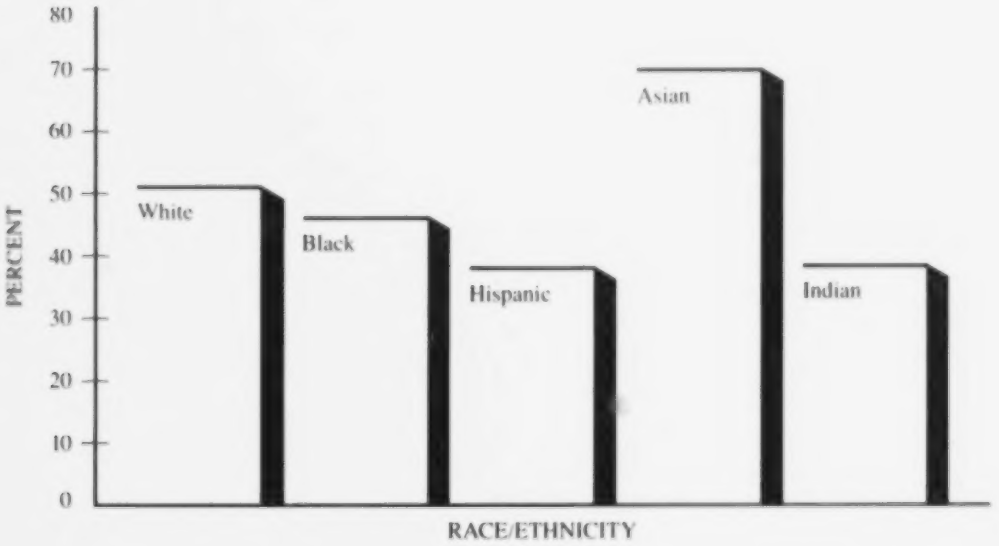


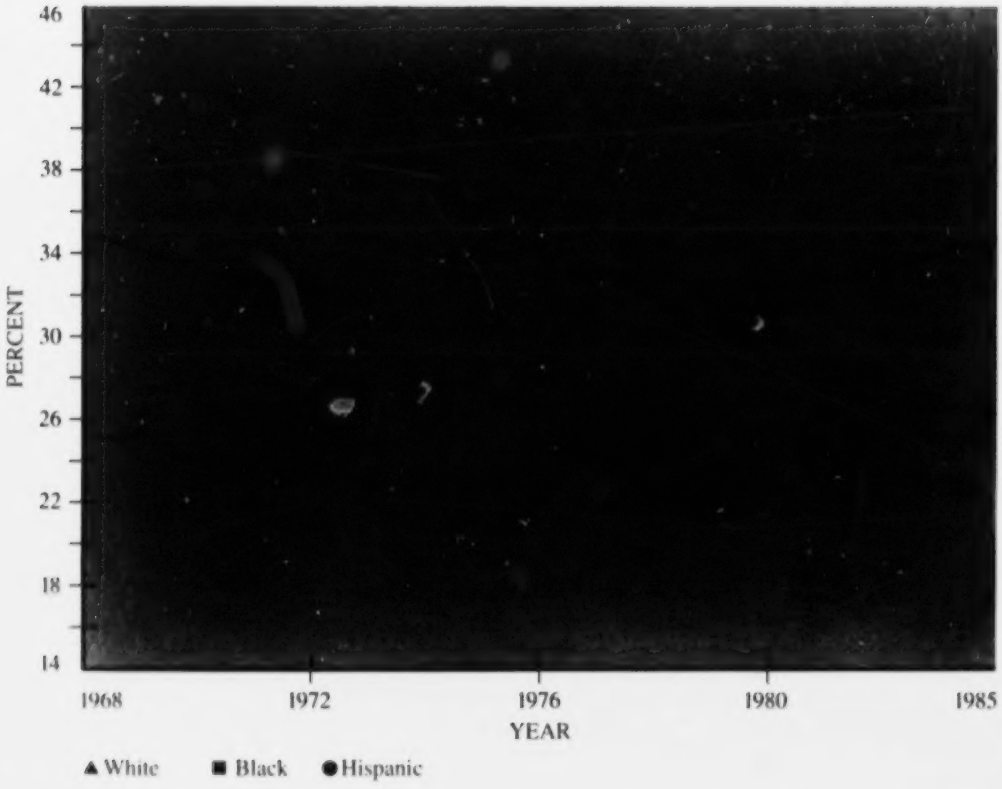
FIGURE 4

Percentage of 1980 High School Graduates Enrolling Full-Time, 1980-1981

SOURCE: C. Dennis Carroll, *High School and Beyond Survey*, unpublished data.

FIGURE 5

College Participation Rates by High School Graduates, 1968-1985



SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 404 and No. 409.

In interpreting these college participation rates, it is important to remember that fewer Blacks and Hispanics than Whites graduate from high school and enroll in college. This double effect -- of lower high school graduation and college enrollment rates -- is apparent in Table 7, which displays the percentage of the *total* college-age population enrolled in college. About 28% of White 18-24-year-olds were enrolled in 1985, compared to 19% of the Blacks and 16% of the Hispanics. Table 7 also reveals growth in minority participation until 1976, decline from 1976 to 1980 and then level rates to 1985.

The notable exception to minority underrepresentation in higher education is the Asian-American high school graduate who continued on to college at a rate significantly greater than any other group (Figure 4). Although they make up only about 2% of the college-age population, they represent 3.1% of total enrollment (Table 8, Figure 7). The Asian-American population is expected to increase from 3.4 million in 1980 to 6.5 million by 1990 and to 10 million by 2000. It is expected that by the mid-21st century Asian-Americans will represent 6.4% of the U.S. population, making them one of the fastest-growing minority groups.[3]

ENROLLMENT TRENDS

Until now we have been examining college participation among the traditional 18-24-year-old "college-age cohort." But total college enrollment is made up of many adult students beyond the age of 24 (and a few younger than 18). To get a complete picture of college participation, enrollment data of students of all ages must be examined.

Freshman Enrollment: Enrollment estimates are collected as part of the annual freshman survey conducted by the Cooperative Institutional Research Program at the University of California at Los Angeles (Figure 6). Effects of the pressure placed by civil rights groups and the federal government on minority access beginning in the mid-1960s are readily apparent in the data on Black freshman enrollment. A 1978 report showed that an extraordinary number of predominantly

	WHITE	BLACK	HISPANIC
1968	35%	25%	—
1972	32	27	26%
1976	33	34	36
1980	32	28	30
1985	34	26	26

TABLE 6

College Participation by High School Graduates,* 1968-1985

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 404 and No. 409.

*18-24-year-old high school graduates enrolled in colleges (civilian population).

	WHITE	BLACK	HISPANIC
1968	28%	14%	—
1972	26	18	13%
1976	27	23	20
1980	26	19	16
1985	28	19	16

TABLE 7

College Participation by 18-24-Year-Olds, 1968-1985

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 404 and No. 409.

		PERCENTAGE						
YEAR	TOTAL (in thousands)	WHITE	MINORITY	BLACK	HISPANIC	ASIAN	AMERICAN INDIAN	ALIEN
1968	4,820	90.7	9.3	6.0	Other	3.5		—
1970	4,966	89.4	10.6	6.9	Other	3.7		—
1972	5,531	87.7	12.3	8.3	Other	4.0		—
1974	5,639	86.5	13.5	9.0	Other	4.5		—
1976	10,986	82.6	15.4	9.4	3.5	1.8	.7	2.0
1978	11,231	81.9	15.9	9.4	3.7	2.1	.7	2.2
1980	12,087	81.4	16.1	9.2	3.9	2.4	.7	2.5
1982	12,388	80.7	16.6	8.9	4.2	2.8	.7	2.7
1984	12,162	80.3	17.0	8.8	4.3	3.1	.7	2.7

TABLE 8

Total Enrollment in Institutions of Higher Education by Race/Ethnicity of Students, Fall 1968-1984

SOURCE: 1968-1974: U.S. Department of Education, "Racial and Ethnic Enrollment Data from Institutions of Higher Education," biennial, as reported in *Statistical Abstract of the United States 1986*, 106th edition, U.S. Department of Commerce, Bureau of the Census, Table 259, page 153.

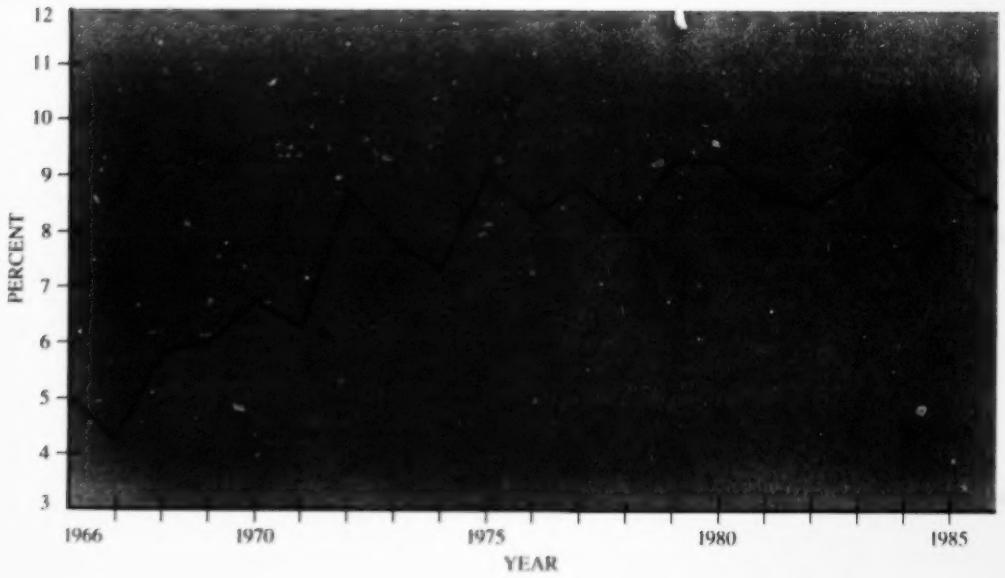
1976-1984: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges & Universities" surveys, as reported in *Digest of Education Statistics 1986-87 and Digest of Education Statistics 1980*.

White institutions began aggressively recruiting Black students in the fall of 1968 in response to the assassination of Martin Luther King Jr. earlier in the year.[4] Figure 6 shows another important increase in Black representation in the falls of 1972 and 1975 after significant increases in federal student aid programs were targeted at low-income students. Since 1976, Black freshman representation has leveled off -- up and down during the 10-year period, but with little overall change from 1976 to 1986.

Total Enrollment: From 1968 to 1984, the total number of students enrolled in institutions of higher education increased from less than 5 million to more than 12 million (Table 8). In 1984, 80% of those 12 million students were White, 17% were resident minorities and 3% were non-resident aliens.

FIGURE 6

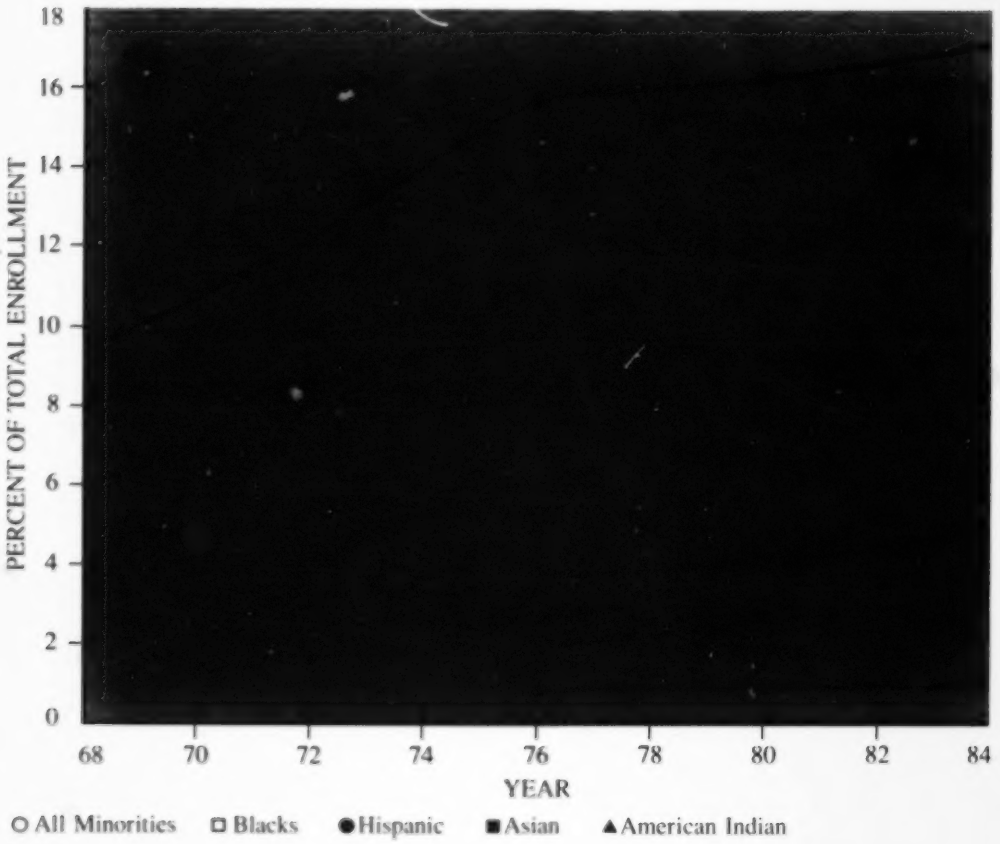
Black Freshmen as Percentage of Total Enrollment



SOURCE: Alexander Astin et al., *The American Freshman: Twenty-Year Trends.*

FIGURE 7

College Enrollment by Ethnicity, 1968-1984



SOURCE: U.S. Department of Education, *Statistical Abstract of the United States*, 106th edition, *Digest of Education Statistics 1986-87* and *Digest of Education Statistics 1980.*

	NUMBER (in thousands)			PERCENT CHANGE	PERCENT CHANGE
	1976	1980	1984	1976-84	1980-84
White	9,076	9,833	9,767	+8	−1
All Minority	1,691	1,949	2,063	+22	+6
Black	1,033	1,107	1,070	+3.6	−3
Hispanic	384	472	529	+38	+12
Asian-American	198	286	382	+93	+34
American Indian	76	84	83	+9	−1
Nonresident alien	219	305	332	+52	+9
Total	10,986	12,087	12,162	+11	+1

SOURCE: U.S. Department of Education, *Fall Enrollment Reports* and *U.S. Office for Civil Rights Compliance Reports.*

TABLE 9

Total Enrollment by Race, Percent Change, 1976-1984

Total enrollment increased by 11% during the eight-year period from 1976 to 1984, a considerably lower rate of increase than that experienced in the early 1970s (Tables 8 and 9). Total minority enrollment was up from about 1.7 million students in 1976 to more than 2 million in 1984, a 22% increase. American colleges and universities also enrolled significantly more nonresident aliens (up 52% since 1976). In contrast, White enrollment, the single biggest component, increased by only 8%. Black enrollment trailed all others, rising only 3.6% during the eight-year period. Since 1980, Black enrollment has declined by more than 3%, putting the 1984 level just 37,000 students higher than 1976 (Table 9).

Figure 7 displays the "shares" represented by various racial-ethnic groups in higher education. Minority representation increased rapidly until the mid-1970s and has grown more gradually since that time. Hispanic representation has increased from 3.5% to 4.3% and Asian-American enrollment from 1.8% to 3.1%. American Indians have shown no change in enrollment, while Black enrollment has decreased from a peak of 9.4% in 1976 to 8.8% in 1984.

Minority representation is highest in two-year institutions (Table 10) where it makes up 21% of total enrollment as compared with more than 14% in four-year institutions. Two-year institutions are especially important for Hispanic and American Indian/Alaskan Natives (Table 11). The majority of the students from these ethnic groups are enrolled in community colleges and technical institutes.

American Indian Enrollment: Until recently, very little attention has been paid to the progress and success of American Indians in postsecondary education. In a special report by the U.S. Department of Education, Judith Fries analyzed these trends.[5] Here are highlights of her findings:

- Since 1950, the American Indian population has grown substantially from 360,000 to 1.4 million in 1980. Almost 45% of this total live in four southwestern states.
- Between 1970 and 1980, the 18-24-year-old cohort more than doubled in size to 234,000.
- American Indians graduate from high school at a 60% rate, up from 51% in 1970.
- Enrollment in higher education peaked in 1982 and is predominantly in two-year institutions. American Indians, like all students, are increasingly attending college part-time.
- Most of the increases in enrollment in the 1970s occurred at the undergraduate level. At the graduate level, enrollment peaked in 1980 and has remained steady since then. First professional enrollment has declined 22% since 1976.

GRADUATE AND PROFESSIONAL SCHOOL ENROLLMENT

Gail Thomas concluded from examining Office for Civil Rights data for the period 1976 to 1982 that "Blacks and Hispanics remained underrepresented in U.S. graduate and professional schools."[6] In fact, she noted, full-time enrollment of Black students in U. S. graduate schools actually decreased during the period. In 1984, minority representation at the graduate and professional level was about half what it was at the undergraduate level for all minority groups except Asian-Americans (Table 12).

TYPE OF INSTITUTION AND RACE/ETHNICITY OF STUDENT	PERCENTAGE DISTRIBUTION WITHIN INSTITUTION TYPE				
	1976	1978	1980	1982	1984
All Institutions	100.0	100.0	100.0	100.0	100.0
White	82.6	81.9	81.4	80.7	80.3
Total Minority	15.4	15.9	16.1	16.6	17.0
Black	9.4	9.4	9.2	8.9	8.8
Hispanic	3.5	3.7	3.9	4.2	4.3
Asian	1.8	2.1	2.4	2.8	3.1
American Indian	.7	.7	.7	.7	.7
Nonresident alien	2.0	2.2	2.5	2.7	2.7
4-Year Institutions	100.0	100.0	100.0	100.0	100.0
White	84.4	83.7	82.9	82.5	81.9
Total Minority	13.1	13.5	13.9	14.1	14.5
Black	8.5	8.5	8.4	8.0	8.0
Hispanic	2.5	2.6	2.9	2.9	3.1
Asian	1.7	1.9	2.1	2.5	2.8
American Indian	.5	.5	.5	.5	.5
Nonresident alien	2.5	2.8	3.2	3.5	3.7
2-Year Institutions	100.0	100.0	100.0	100.0	100.0
White	79.3	78.6	78.6	77.8	77.6
Total Minority	19.5	20.1	19.8	20.8	21.1
Black	11.0	11.0	10.4	10.3	10.1
Hispanic	5.4	5.6	5.6	6.1	6.4
Asian	2.0	2.4	2.7	3.3	3.7
American Indian	1.1	1.1	1.0	1.0	1.0
Nonresident alien	1.1	1.3	1.4	1.3	1.2

TABLE 10

Total Enrollment in Institutions of Higher Education by Type of Institution and by Race/Ethnicity of Students in the United States, Fall 1976-1984

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 1987* (forthcoming), Table 97.

1978 data source: National Center for Education Statistics, "Fall Enrollment in Institutions of Higher Education," 1978, *Digest of Education Statistics 1980*.

As for fields within professional schools, the various ethnic groups are not equally distributed (Table 13). Veterinary medicine remains overwhelmingly White (95% in 1982), as does the field of law (90% in 1985). On the positive side, however, between 1980 and 1985 minority enrollment in law school increased significantly. Blacks increased by 9.9%, Hispanics by 22.1%, Asians by 31.2% and American Indians by 11.6%.[7]

According to a recent study by the Robert Wood Johnson Foundation, the progress achieved in increasing minority representation in medical schools reached its peak in the mid-1970s. "The years since then, however, have witnessed the leveling off of this hard-won progress."[8] The report noted that too few Blacks and Hispanics were participating in high school and summer enrichment programs in science and math to achieve enrollment parity with their representation in the population. At the same time, the report concludes that there has been some slackening of commitment on the part of medical schools to recruiting minorities.

SUMMARY

Table 12 provides a portrait of minority representation at all levels of postsecondary education. Blacks and Hispanics are especially underrepresented at the more advanced levels. While the proportion of Blacks in undergraduate studies approaches that of their numbers in the population, this is not true for graduate and professional education (nearly 13% of the college-age population, but only 9.5% of the undergraduate enrollment and 4.8% of the graduate enrollment). Hispanics and American Indians show similar dramatic drops at these levels. In contrast, Asian-Americans participate equally in graduate and undergraduate education. In all cases, their representation in higher education is above their proportion in the population as a whole (2% of the college-age population, 3.2% of the undergraduate, 2.6% of graduate enrollment and 3.3% of first professional enrollment).

	TWO-YEAR INSTITUTION	FOUR-YEAR INSTITUTION
White	35.9%	64.1%
Black	42.7	57.3
Hispanic	54.4	45.6
Asian	43.2	56.8
American Indian	54.2	45.8
Nonresident alien	15.7	84.3

TABLE 11

Distribution of Students by Race and Institutional Type, 1984

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" survey as reported in *Digest of Education Statistics 1986-87*, Table 97.

	UNDERGRADUATE	GRADUATE	PROFESSIONAL	UNCLASSIFIED
White	79.9	80.2	87.4	82.0
Minority	18.0	9.9	11.4	16.4
Black	9.5	4.8	4.8	8.0
Hispanic	4.6	2.2	2.9	4.5
Asian	3.2	2.6	3.3	3.2
American Indian	.7	.3	.4	.7
Nonresident alien	2.1	9.9	1.2	1.6
Total	100.0	100.0	100.0	100.0

SOURCE: U.S. Department of Education, Office for Civil Rights, as reported in *The Chronicle of Higher Education*, July 23, 1986.

TABLE 12

1984 Enrollment by Level (% of Total)

	WHITE		BLACK		HISPANIC		OTHER*	
	#	%	#	%	#	%	#	%
Dentistry (1982)	18,477	85.6	951	4.4	605	2.8	1556	7.2
Veterinary Medicine (1982)	7,821	95.0	149	1.8	116	1.4	143	1.7
Law (1985)	111,746	90.0	6,051	4.8	3,679	3.0	2,616	2.1
Medicine (1985)	54,335	81.6	3,849	5.8	2,562	3.8	5,820	8.7**
Business Management (1982)	49,641	76.2	2,608	4.0	1,193	1.8	11,675	18.0

1982: Gail E. Thomas, *The Access and Success of Blacks and Hispanics in U.S. Graduate and Professional Education*. National Research Council, 1986, Tables 4 and 5.

1985 Medical school enrollment: 1985-86 Fall Enrollment Survey. Reflects enrollment at 127 schools, as reported in the *Fifth Annual Status Report on Minorities in Higher Education, 1986*, American Council on Education, Table 8, p. 29.

1985 Law school enrollment: The American Bar Association Section of Legal Education, *A Review of Legal Education in the United States, Fall, 1986*, as reported in *Fifth Annual Status Report on Minorities in Higher Education, 1986*, American Council on Education, Table 9, p. 29.

TABLE 13

Full-Time Enrollment in Professional and Graduate Programs, Selected Years

*-Includes Asian, American Indian/Alaskan Native and nonresident aliens.
**-6.4% Asian-American

CHAPTER II NOTES

1 C. Dennis Carroll. *High School and Beyond Survey*, "The Timing of Abnormal Progression Among 1980 High School Seniors Entering Postsecondary Education in October 1980." July 2, 1986; data supplied by author.

2 National Center for Education Statistics. "Statistical Highlights: College Attendance After High School," NCES newsletter. Washington, D.C.: U.S. Department of Education, 1984.

3 *New York Times*, August 3, 1986, Table 8.

4 Marvin W. Peterson, Robert T. Blackburn, Zelda F. Gamson, Carlos H. Arce, Roselle W. Davenport and James R. Mingle. *Black Students on White Campuses: The Impacts of Increased Black Enrollments*. Ann Arbor, Michigan: The Institute for Social Research, the University of Michigan, 1978, pp. 11, 23.

5 Judith Fries. *American Indian Enrollment*, 1987.

6 Gail Thomas. *The Access and Success of Blacks and Hispanics in U.S. Graduate and Professional Education*, a working paper prepared for the Office of Scientific and Engineering Personnel, National Research Council. Washington, D.C.: National Academy Press, 1986, p. 14.

7 American Bar Association Section on Legal Education. *A Review of Legal Education in the United States, Fall 1986*. Washington, D.C., 1986.

8 Robert Wood Johnson Foundation. *Special Report: The Foundation's Minority Medical Training Programs*. Princeton, New Jersey: Robert Wood Johnson Foundation, 1987, p. 3.

CHAPTER III: RETENTION AND SUCCESS

Access is only the first step to meaningful participation in higher education. If minority groups are going to participate more fully in technical and professional careers, they must successfully complete degree programs.

This chapter reviews the data available on retention and the factors that appear to contribute to enrollment and successful completion in postsecondary education.

THE 1980 HIGH SCHOOL AND BEYOND STUDY

An excellent way of determining the success of students in postsecondary education is through longitudinal studies which survey and then follow up with individual students. Since 1980, the U. S. Department of Education has been following the persistence of the high school graduation class of that year. With two follow-up surveys now complete, we have a picture of the factors related to enrollment, persistence and success in higher education.

Among the general findings are these (Table 14 and Figure 8):

1. Only about half of the graduating seniors follow what is often considered the normal persistence route -- full-time college enrollment in the fall following graduation. (This includes students who enrolled in all forms of postsecondary education, including short-term technical programs.) Figure 8 illustrates what is often called the half-and-half rule. Half of the students in the prototypical "Central High School Class of 1980" went on to postsecondary education. Of those who started full-time in four-year programs, about half were college seniors four years later. The total pool of college graduates from this cohort will be supplemented by those who later transfer from two-year institutions as well as those who enter later or part-time.

2. Among racial and ethnic groups, Asians were the most likely to enroll in higher education. The survey found that only 12% had not enrolled in higher education in the year following high school graduation. Cubans had the next highest enrollment rates, followed by Whites, Blacks and Hispanics (other than Cubans). Puerto Ricans had the lowest rate of postsecondary enrollment, but still a majority of this group enrolled in some form of postsecondary education during the first year following graduation.

These statistics, however, obscure much about the nature of postsecondary enrollment.

1. Only 31% of the high school class of 1980 spent some time in a public or private four-year university. As Table 14 demonstrates, the rate of enrollment in four-year institutions varied considerably among racial-ethnic groups with Mexican-Americans having the lowest rates (13%).

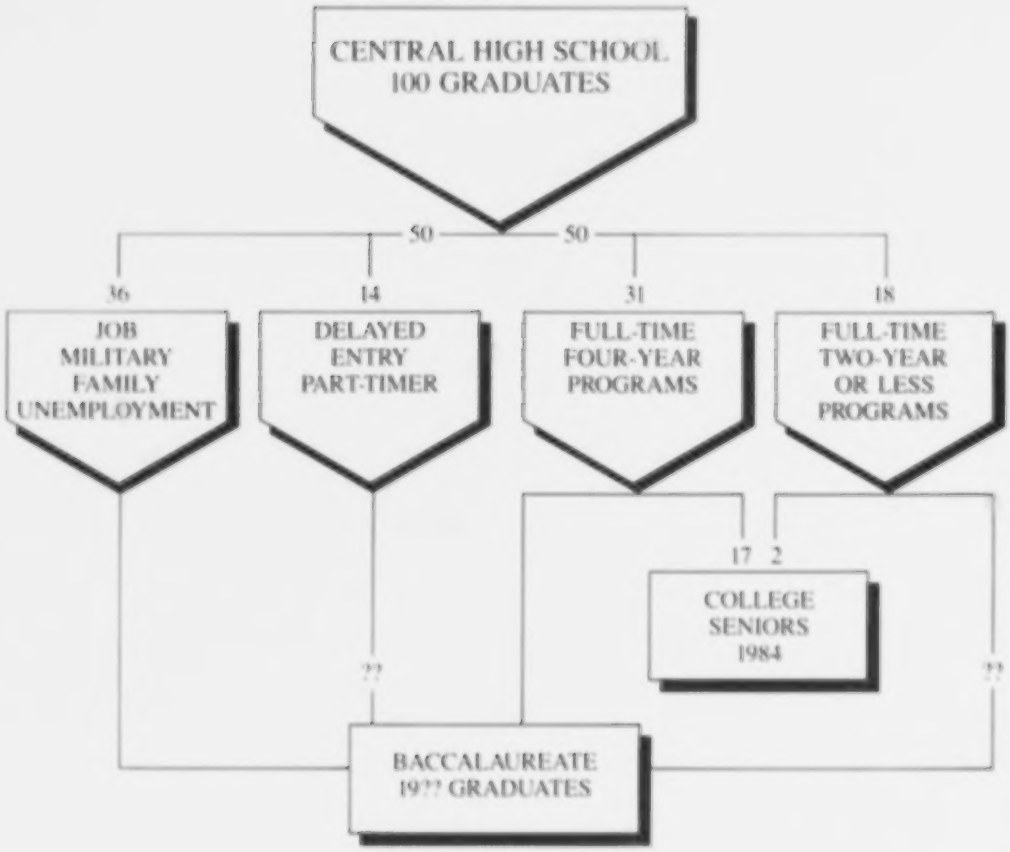
2. The Black enrollment rate in four-year institutions was similar to White rates (29% versus 32%), showing the strong influence of the traditionally Black colleges and universities. In contrast, Cuban populations had substantial representation in two-year institutions, a figure influenced by the concentration of this population in Florida where community college enrollments are high.

FACTORS AFFECTING ENROLLMENT

Race/ethnicity is often a proxy for a variety of other factors that appear to be more directly related to higher education enrollment. Fortunately the *High School and Beyond Survey* allows us to examine in depth some of these other factors (Table 15). Among the strongest factors are those

FIGURE 8

What Happened to the Class of 1980?



SOURCE: C. Dennis Carroll, *High School and Beyond Survey*

TABLE 14

Percentage of 1980 High School Seniors Beginning Postsecondary Education During 1980-1981 by Type of Institution and Ethnicity

	DID NOT PARTICIPATE	PARTICIPATED		
		DELAYED ENTRY OR PART-TIME	FULL-TIME 2-YR OR TECHNICAL	4-YR
Total	36.4	14.4	18.3	31.0
White	35.2	14.0	18.3	32.4
Black	40.7	13.6	16.5	29.2
Hispanic	44.3	18.7	20.0	16.9
Asian	12.2	17.6	24.1	45.9
American Indian	37.4	24.5	22.0	16.1
Hispanic Subgroups				
Mexican	45.4	20.5	21.3	12.7
Cuban	17.3	18.8	32.7	31.2
Puerto Rican	48.5	13.9	7.6	29.9
Other	45.9	16.6	19.0	18.5

SOURCE: C. Dennis Carroll, *High School and Beyond Survey*, "The Timing of Abnormal Progression Among 1980 High School Seniors Entering Postsecondary Education in October 1980." July 2, 1986, data supplied by the author, Table 1, p. 1.

TABLE 15

Factors Affecting Enrollment

CHARACTERISTICS	% NEVER IN POSTSECONDARY EDUCATION
Family Income	
Less than $7,000	50
$16,000 - 20,000	40
Over $38,000	17
Parents' Education	
Less than high school	64
Less than 2 years college	29
Ph.D., M.D.	9
High School Program	
General	46
Academic	11
Vocational	55
High School Type	
Public	39
Catholic	17
Other private	18
Socio-Economic Status	
Low	53
2nd quartile	43
3rd quartile	28
High	12

SOURCE: C. Dennis Carroll. *High School and Beyond Survey*, "The Timing of Abnormal Progression Among 1980 High School Seniors Entering Postsecondary Education in October 1980," July 2, 1986. Table 1, pp. 1-3.

related to family income and parents' education. Nearly two-thirds of those in the class of 1980 whose parents had less than a high school education never enrolled in higher education. This dropped to 29% among those whose parents had some college, while only 9% of those whose parents had Ph.D.s or M.D.s did not attend college. The same relationship holds true for family income. Students who came from high-income families were substantially more likely to attend college than those from low-income families. As expected, students who pursued an academic curriculum in high school were more likely to enroll in postsecondary education than their counterparts in vocational and general curriculums.

"THE FAST TRACK" (OR NORMAL PERSISTERS)

The *High School and Beyond Survey* documents what many have claimed about higher education enrollment -- that the "normal persistence" pattern of enrolling full-time following high school graduation and completing a college education without interruption is not at all normal. With stopping out, dropping out and shifts to part-time enrollment, only 19% of the class of 1980 had stayed in college full-time for four consecutive years. (This includes students who enrolled first in community colleges and then transferred.) Table 16 dramatically shows some of the factors that contribute to this "fast track" -- high school preparation and enrollment initially in a four-year institution being the most powerful.

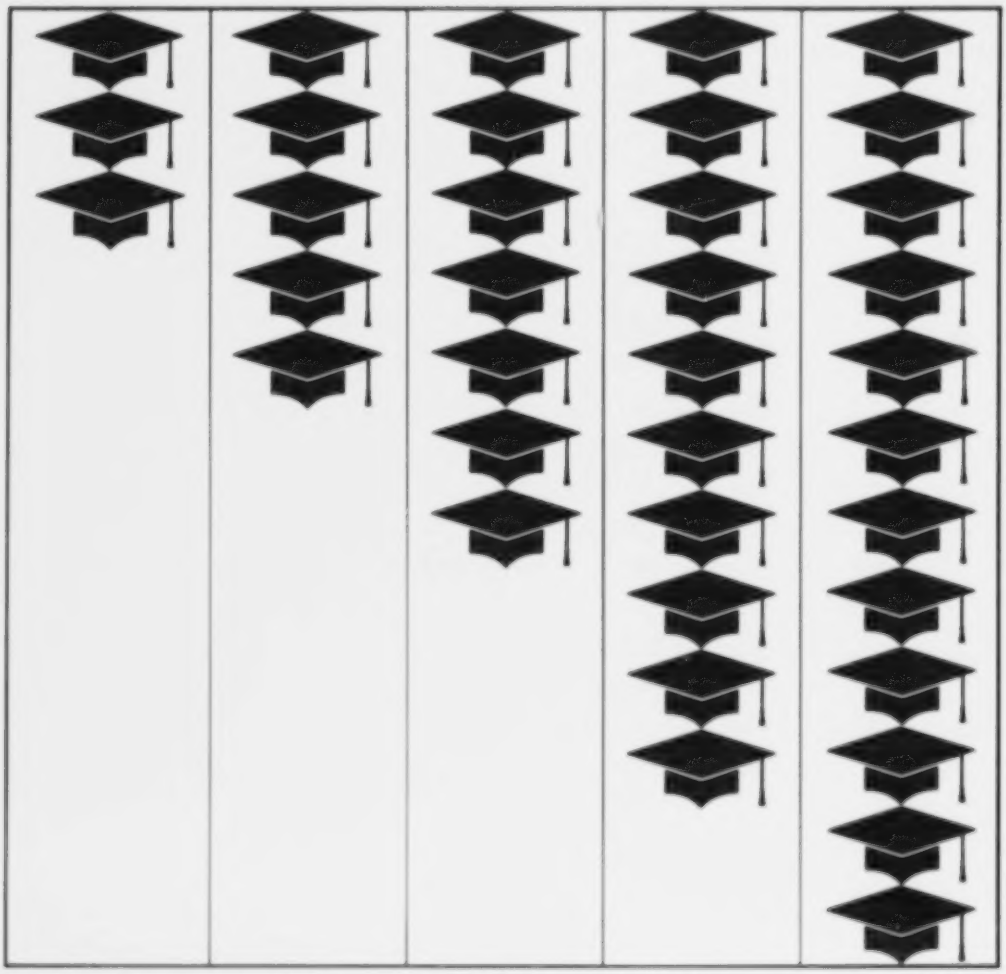
Significant differences exist among racial-ethnic groups, with Asians overwhelmingly ahead of other groups on the "fast track." One of every three Asians in the class of 1980 continued full-time college enrollment for the four-year period. In contrast, only one of every 10 Hispanics was among this group (Figure 9).

As with initial enrollment, both income and parents' education were directly related to persistence. Nine out of 10 students whose family income was less than $7,000 either never entered college or failed to persist full-time.

Table 16 also reveals how important high school preparation is to staying on the "fast track." Only two of every 100 C students in high school received a baccalaureate in the "normal" four-year period.

FIGURE 9

Who Is on the Fast Track in the Class of 1980?*



SOURCE: *High School and Beyond Survey.*

*1980 seniors who enrolled full-time in fall 1980 and continued full-time for four years. Includes community college students who transferred.

THE DETERIORATING TRANSFER FUNCTION

Many states have established systems of higher education which utilize the community colleges as the entry point for large numbers of students. These open-door institutions provide both general arts and sciences programs targeted at students planning to transfer to four-year institutions as well as occupational/vocational programs of a terminal nature. In some states, community colleges enroll close to or greater than a majority of all students in higher education. As we noted earlier, two-year institutions are a major entry point for minorities, especially Hispanics. In 1985, the California Postsecondary Education Commission observed:

> ***The community colleges remain the institution of last resort for many who aspire to a baccalaureate degree . . . . Most low-income students and most Black and Hispanic students who currently attend college in California enroll initially in community colleges -- and thus any weakness in the community college transfer function is particularly detrimental to them.[1]***

TABLE 16

Characteristics of the Fast Track* (or Normal Persistence)

CHARACTERISTICS	% OF 1980 HIGH SCHOOL CLASS
Total	19
Ethnicity	
White	20
Black	14
Hispanic	10
Asian	33
American Indian	8
Family Income	
Less than $7,000	8
Greater than $38,000	36
Parents' Education	
Less than high school	6
Ph.D. or M.D.	43
High School Homework	
Less than 1 hour per week	7
5 or more hours per week	38
High School Grade Average	
A	51
C	2
Children	
Have no children	22
Have some children	2
Enrollment	
First time in public 2-year college	9
First time in public 4-year college	51

SOURCE: C. Dennis Carroll, *High School and Beyond Survey*, "The Timing of Abnormal Progression Among 1980 High School Seniors Entering Postsecondary Education in October 1980," July 2, 1986. Table 13, page 66.

*Fast Track: 1980 seniors who enrolled full-time in fall 1980 and continued full-time for four years. Includes community college students who transferred.

Clearly, the success of minorities in gaining access to professional fields that require a baccalaureate or beyond depends in large part on their success in two-year institutions and their ability to gain admission to the upper-division programs of four-year institutions. Two-year institutions are also increasingly important in providing access to technical careers requiring associate degrees in the applied sciences.

Unfortunately, the data provided by the *High School and Beyond Survey* and those conducted by individual states indicate that students entering community colleges are not persisting to the associate degree or transferring to four-year institutions in large numbers.

The *High School and Beyond Survey* (Table 16) indicates that only 9% of those first entering community colleges in 1980 were college seniors four years later. This low transfer rate is partly explained by the rigorous definition of persistence used here (i.e., no part-time status, no stopping out, no dropping out from 1980 to 1984). The dropouts and stopouts also include large numbers of students who were pursuing terminal degrees and certificate programs with no plans to transfer.

State higher education boards that have excluded vocational and technical students from their studies report higher, but still disturbingly low, transfer rates. For example, the Texas Coordinating Board found that only 19.3% of the students enrolling in community college transfer programs in the fall of 1981 had transferred to a senior institution by the spring of 1985.[2] Furthermore, they found that full-time students transfer at higher rates than part-timers. (The study does note that these transfer rates represented "minimum" rates because they did not include students who transferred to private institutions or others who transferred after the conclusion of the study period.)

The Tennessee Higher Education Commission reported in 1987 that only 28% of the state's first-time full-time freshmen were receiving associate or baccalaureate degrees within six years of initial enrollment.[3]

California, which depends heavily upon community college transfers to feed its senior institutions, has seen a steady deterioration. This has been the case especially with Black and Hispanic students. They made up only 16% of the 35,000 community college students who transferred to senior institutions in the fall of 1983, even though they represented a much larger percentage of the freshman class in community colleges.[4]

The commission concluded that the transfer function depended on five essential elements: (1) adequate high school preparation, (2) assessment and counseling by community colleges, (3) the availability of high-quality transfer courses, (4) clear information about transfer opportunities, requirements and procedures and (5) close articulation of community college and university plans and programs.[5]

The ability of community college students to transfer is also affected by the policies adopted by the accrediting community. The American Association of Community and Junior Colleges has been especially concerned about the roadblocks placed in the field of business, where many students lose a substantial number of credits in the process of transferring from two-year to four-year institutions.

INSTITUTIONAL RESPONSES TO THE MINORITY RETENTION PROBLEM

If retention after admission remains a problem in American higher education, it isn't for lack of study. A long list of researchers has examined both the student and the institutional characteristics associated with high levels of attrition, most of which are confirmed by the High School and Beyond study.[6] Leonard Ramist associated the attrition problem with socio-economic family background, poor academic preparation and low aspirations.[7] Other factors such as full-time employment, marriage and financial problems also are associated with high attrition. All of these factors are confirmed by the *High School and Beyond Survey*.

For minority students, these same factors are magnified by multiple handicaps. In addition, researchers have often identified "isolation" and racial bias as additional problems.[8]

Institutional response to minority adjustment problems has nearly a 20-year history. Marvin Peterson and other researchers, in a 1978 study of several institutions that rapidly increased their minority enrollments in the late 1960s and early 1970s, identified what until recently has been the standard for institutional response: an array of special, and often separate, programs targeted at the minority problems.[9] These included recruitment and admission efforts, financial aid programs, academic support services, curricular responses (e.g., ethnic studies) and social and cultural programming. This separate programming mirrored what the Peterson group observed in the social and intellectual life of the student community as well -- an absence of meaningful integration. In 1973 and 1974, they found that "a placid surface only barely masked hostilities between Black and White students."

In more recent accounts of student relations, it appears that little has changed. Allan Bloom, writing about the University of Chicago, noted the continued separateness of Black students.

> ***For the majority of Black students, going to the university is therefore a different experience from that of the other students, and the product of the education is also different. The Black student who wishes to be just a student and to avoid allegiance to the Black group has to pay a terrific price, because he is judged negatively by his Black peers and because his behavior is atypical in the eyes of Whites.[10]***

Rather than voluntary Black separatism, other observers point the finger at continued White racism which prevents meaningful integration in predominantly White institutions.

Regardless of cause, there seems to be widespread agreement that student segregation is a problem, and for minority students it acts as a deterrent to successful completion of a degree program. Unfortunately, few institutions seem to be addressing race relations among students directly.

The lack of student connection to an institution's social and academic life is especially damaging to retention efforts, according to Vincent Tinto.[11] This was also the principal indictment of the broad-based critiques of undergraduate education expressed in recent national studies.[12] Fragmentation of the curriculum, lack of purpose, lack of close personal contact with faculty and

advisers are all cited as contributing to a low-quality academic experience. This theory is supported as well by institutionally based retention studies that show that many students drop out for nonacademic reasons.

More recently, Richard Richardson Jr. has been directing a study of predominantly White public universities that have demonstrated a significant commitment to the retention and graduation of minorities.[13] While the Peterson study of the early 1970s found institutions concentrating on social and curricular issues, Richardson found greater emphasis on preparation problems. For example, he found a number of institutions working with feeder high schools to increase the pool of qualified high school graduates.

As for program integration, Richardson noted that "as enrollments of a specific minority group approach 20%, the environment changes from accommodation through special programs to incorporation into the mainstream of institutional culture."[14]

ACADEMIC CLIMATE AND MINORITY SUCCESS

In a thorough study of the factors relating to academic success, Alexander W. Astin concluded that "the minority student with the best chance of persisting enters college with good high school grades, well-developed study habits and relatively high self-esteem. . . ."[15] Further, he noted, "by far the most important predictors of the student's undergraduate GPA is the student's high school GPA. Standardized test scores add nothing to the prediction except in the case of Blacks, where they add only slightly to the accuracy of the prediction."[16]

Astin, however, found few "environmental" characteristics that showed a consistent relationship to undergraduate satisfaction and persistence. For Blacks and Hispanics, living at home showed some positive association with satisfaction. As for progressing to graduate or professional levels, minority students who entered "prestigious" institutions were substantially more likely to progress to graduate levels than those who did not.

Many of the studies that evaluate the success of minorities are hampered by the lack of specific measures of progress, so that the "value added" by the education itself cannot be judged. Given the tendency of faculties to lower standards to accommodate large numbers of underprepared students, enrollment and even graduation rates must be viewed as suspect. Thus, it becomes difficult to answer the question of what type of institution (and curricular and remedial strategies) are likely to contribute to high performance among minorities.

With the growth of a variety of assessment instruments and tests in higher education, this becomes more feasible, although formidable problems remain in pinpointing causation. The New Jersey Department of Higher Education, which uses a mandatory statewide placement exam, has found that remediation helps ensure subsequent success in credit programs.[17] The Basic Skills Council, which monitors remedial activities, noted that successful remedial programs received high priority in the institution, were taught by qualified faculty, used small classes and received adequate financial support.

The Florida Postsecondary Education Commission found substantial differences across institutions in the passage rates of minorities taking that state's required "rising junior" exam.[18] It is difficult from the study design, however, to determine whether the reported institutional differences are due to different minority student populations, institutional characteristics such as size or instructional interventions. Q. Whitfield Ayres attributed differences in minority student achievement on the National Teachers' Exam among the University of North Carolina campuses to the academic "climate" on the campus and faculty qualifications.[19]

These few studies are in no way conclusive about the institutional factors that lead to minority academic success. Most institutional efforts remain unevaluated.

VALUES, ASPIRATIONS AND THE STUDENT CULTURE

One of the best predictors of degree completion are the stated intentions of students themselves. High aspirations produce results in minority as well as majority populations.[20]

College-going and completion rates also seem to be related to the perceived returns expected. These intentions and aspirations are in turn influenced by the family and cultural backgrounds from which the students come. These "value" orientations are often cited as the reason for success among Asian-American students. The Confucian ideal that the individual is infinitely perfectable appears to have resulted in an overwhelming desire among Asian-Americans to achieve in the classroom.

It is this value placed on education that, some claim, is the missing ingredient in low-achieving Black and Hispanic students.

Andrew Billingsley, a perceptive observer of minority family life, disagrees.

> ***The poor have the same basic American values of stability, achievement and upward mobility that other Americans have. It is their inability to attain these values which distinguishes them from the others, and this inability is a highly structured feature of the society at large.***[21]

While surveys of minority students often show a high level of aspiration for a college education, this is often in conflict with observations about the student culture. Glenn C. Loury, a Black professor of political economy at Harvard, found a striking example of this phenomenon among Blacks at the Massachusetts Institute of Technology, who describe fellow Black students who excelled academically in that environment as "incognegro."[22] Loury supports this contention with the work of social psychologist Jeff Howard and his associate Ray Hammond, who observed that "an internalized group expectancy of poor academic performance leads Black youngsters to avoid the kind of engagement in academic rigors necessary for success at the most competitive institutions. Poor performance, from this perspective, becomes a self-fulfilling prophecy."[23] Clifton Wharton Jr., former president of the State University of New York, supports this view but points the finger at the school atmosphere and the signals conveyed by teachers and counselors. He also opposes such institutionalized policies as "dual college-admission standards" or the lowering of graduation or professional certification standards. "Do we think that by these shabby devices we are doing Black youngsters a favor?" he asks.[24]

Some institutions and states are taking on the aspiration problem directly. The Indiana College Placement and Assessment Center, now in the pilot stage, plans to survey all 9th graders about their education plans. The program will identify those who are undecided about their educational futures and match them with local support groups and individuals who will mentor them throughout the high school years.

This program and others like it are intended to forge a much stronger link between educational institutions and community-based organizations that might get personally involved with minority students.[25]

CHAPTER III NOTES

1 California Postsecondary Education Commission. *Reaffirming California's Commitment to Transfer: Recommendations for Aiding Student Transfer From the California Community Colleges to the California State University and the University of California*, Commission Report 85-15. Sacramento, California, 1985, p. 8.

2 Texas College and University System Coordinating Board. Summary of an "Analysis of Student Transfer and Persistence: Community and Junior College Transfer Study." Austin, Texas, 1987.

3 These figures are for students beginning in the state community college receiving degrees from public or private institutions within the state. Excludes students receiving certificates or transferring out-of-state students beginning in 1976, 1977 and 1978. Tennessee Higher Education Commission, data on community college transfers, provided by Robert R. Appleson. Nashville, Tennessee, 1987.

4 Black and Chicano students aged 19 and under made up 26.8% of freshmen of this age in the fall of 1983. California Postsecondary Education Commission, *Update of Community College Transfer Student Statistics, Fall 1983*, Report 84-10, March 1984. California Postsecondary Education Commission, *Update of Community College Transfer Student Statistics, Fall 1984*, Commission report 85-21. Sacramento, California, 1985, p. 40.

5 California Postsecondary Education Commission. *Reaffirming California's Commitment*, p. 9.

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8 Michael T. Nettles, A. Robert Thoeny and Erica J. Gosman. "Comparative and Predictive Analyses of Black and White Students' College Achievement and Experiences." *Journal of Higher Education*, Vol. 57, No. 3. Ohio State University Press, 1986.

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10 Allan Bloom. *The Closing of the American Mind*. New York: Simon and Schuster, 1987, p. 95.

11 Vincent Tinto. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research," *Review of Educational Research*, Vol. 45, 1975.

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13 Richard C. Richardson Jr., Howard Simmons and Alfredo G. de Los Santos Jr. "Minority Retention and Achievement: Lessons From Ten Public Universities," a presentation to the Western Interstate Commission for Higher Education Regional Policy Committee on Minorities in Higher Education, Las Cruces, New Mexico, April 29, 1987.

14 *Ibid. p. 6.*

15 Alexander W. Astin. *Minorities in American Higher Education*. San Francisco, California: Jossey-Bass, Inc., 1985, p. 110.

16 *Ibid.* p. 111.

17 New Jersey Department of Higher Education. *Effectiveness of Remedial Programs in New Jersey Public Colleges and Universities, Fall 1983-Spring 1985*. Trenton, New Jersey: New Jersey Basic Skills Council, November 21, 1986, pp. 19 and 20.

18 Florida Postsecondary Education Planning Commission. *Preparation and Performance of Minorities on the College-Level Academic Skills Test in Florida Community Colleges*, prepared by George P. Cummings Jr.,Tallahassee, Florida, Draft, May 1987.

19 Q. Whitfield Ayres. "Differences in Student Achievement Among the Campuses of the University of North Carolina," *Popular Government*, Summer 1980, pp. 17-24.

20 Astin, *Minorities*. p. 96.

21 Andrew Billingsley. "Black Families in a Changing Society," *The State of Black America, 1987*. New York: National Urban League, January 1987, p. 106.

22 Glenn C. Loury. "Dimensions of Excellence in a Pluralistic Society," *The College Board Review*, No. 142, Winter 1986-87.

23 *Ibid.* p. 41.

24 Clifton R. Wharton Jr. "Demanding Families and Black Achievement," *Education Week*, October 29, 1986.

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CHAPTER IV: MINORITY REPRESENTATION IN THE PROFESSIONS

One measure of an integrated, socially cohesive society is the degree to which minority members are represented in the professional and political elites. In that regard, the United States has made tremendous progress since World War II, although the experience has been different for various racial and ethnic groups.

Blacks, the largest racial minority in America and the only one to carry the burden of a history of slavery and pervasive legal discrimination, have had the most uniformly difficult time gaining access. While a small business and professional class has existed within the Black community since the 19th century, it was not until the federal government and the labor movement opened doors in the 1930s that real progress was achieved. The New Deal provided some of the first openings for Black professionals outside of the Black community itself.[1]

The most dramatic changes in Black mobility occurred during the 1950s and 1960s, when a true Black middle class began to emerge. William Wilson reported that only about 16% of Black males were employed in middle-class occupations in 1950, a figure that grew to more than 35% in 1970. He attributed the emergence of a middle-class Black community to four major factors: overall economic growth, increased involvement of Blacks in the labor movement, equal employment legislation and continued migration from the rural South.[2]

Evidence of the change in status of Blacks was provided by James P. Smith from data taken from the University of Michigan's Panel Study on Income Dynamics.[3] He reported that while only 26% of Black families could be classified "middle class" in 1940, 59% met his definitions in 1980. The percentage of "poor" Black families (using the federal government's definition of poverty adjusted for inflation and family size) had dropped from 71% in 1940 to 30% in 1980.

Another piece of evidence of the growing professional and political clout of Blacks in American society is their representation among the country's elected officials. Georgia Persons found 6,424 Black elected officials in the United States in 1987, up from 1,469 in 1970.[4] The overwhelming majority of these are at the local level, however, many of them in urban municipal offices. A hollow victory, some would claim, at a time when power has shifted to the suburbs and the state house.

Despite this progress in the middle class and in the political realm, Blacks remain disproportionately overrepresented among the nation's poor. The emergence of a permanent "underclass" in many urban areas has been the subject of numerous commentaries and analyses.[5]

The progress and status of Hispanics in American society is not as easily explained or documented. It is a diverse group with quite different experiences. Mexican-Americans, the largest subgroup, have not faired nearly as well as Cubans, a substantially middle-class population. And group progress among Mexican-Americans is constantly diffused by a continued influx of new immigrants primarily from Mexico and Central America. These class differences are apparent from the data on mean income: $12,400 among Puerto Ricans in 1985, $19,184 for Mexican-Americans and $22,587 for Cubans.[6]

Generational differences seem especially apparent in the Hispanic community. Vilma Ortiz noted that "second-generation Hispanic youth have significantly higher achievements after controlling for family background, while third-generation youth do not differ significantly from non-Hispanic White youth."[7]

Fifteen states account for more than 90% of the nation's Hispanic population, with California having the largest Mexican-American population, New York the largest Puerto Rican population and Florida the largest Cuban population.[8]

Table 17 summarizes the current status of Blacks and Hispanics in various occupations. Blacks now make up nearly 6% of the managerial and professional work force, Hispanics more than 3%.

TABLE 17

Employed Persons by Race/Occupation, Selected Professional Fields, 1985

	BLACK	HISPANIC
Managerial and Professional	5.9%	3.3%
Education Administrators	9.4	2.6
Managers, Medicine and Health	8.1	4.6
Accountants	5.9	4.2
Architects	3.1	4.6
Engineers	2.6	2.6
Physicians	3.7	3.9
Dentists	2.6	2.1
Registered Nurses	6.8	2.1
College Teachers	3.9	3.0
Elementary School Teachers	11.1	2.7
Secondary School Teachers	7.6	3.2
Social Workers	17.6	5.6
Lawyers and Judges	3.3	2.3
Technical, Sales and Administrative Support	8.4	5.0
Health Technicians	13.6	4.1
Engineering Technicians	6.4	4.9
Computer Programmers	6.4	2.5
Sales Occupations	5.5	4.4
File Clerks	17.4	8.5
Telephone Operators	17.9	5.5
Postal Clerks	26.1	5.0
Teachers' Aides	17.8	11.1
Service Occupations	17.5	8.1
Child Care Workers	8.9	4.3
Cleaners and Servants	42.3	13.3
Firefighters	5.9	3.7
Police and Detectives	13.5	6.1
Short-order Cooks	20.7	4.4
Nursing aides, Orderlies	29.2	4.9
Janitors and Cleaners	24.0	10.9
Precision Production, Craft and Repair	7.1	7.4
Mechanics	6.9	6.6
Carpenters	4.8	6.4
Extractive Occupations	2.6	9.2
Operators, Fabricators, Laborers	14.7	10.0
Truck Drivers	12.9	5.9
Handlers, Helpers	16.3	10.2
Farming, Forestry, Fishing	7.8	9.4
Operators, Managers	1.4	1.1
Fishers, Hunters, Trappers	1.1	9.5
Farm Workers	11.6	17.1

SOURCE: U.S. Bureau of Labor Statistics as reported in U.S. Bureau of the Census, *Statistical Abstract of the United States 1987*, 107th Edition, pp. 385-386.

Blacks are represented mostly in the fields of education (elementary and secondary), social work and health (managerial and nursing, not physicians). Their lowest representation is in engineering, law, dentistry and college teaching.

Hispanic representation is highest among social workers (5.6%), managerial positions in medicine and health, and architecture. Unlike Blacks, Hispanic numbers are small in such fields as elementary teaching and nursing. Relative to their numbers in the population as a whole (less than 7%), they are well ahead of Blacks in such occupations as engineering, medicine and dentistry.

The representation of Blacks and Hispanics in other occupational categories drives home the message of how low-status, low-paying jobs are the domain of minorities in American society. Blacks make up 42% of the cleaners and servants, 29% of the nursing aides and orderlies, but only 6% of the firefighters and 5% of the carpenters. Hispanics are 17% of farm workers, 11% of janitors and 11% of teachers' aides (but only 3% of school teachers).

MINORITY GRADUATES IN THE SCIENCES AND ENGINEERING

The baccalaureate degree has become the minimal requirement for access to professional careers in nearly all fields, and advancement in the field usually requires advanced degrees. Low levels of entry into many professions is caused by (1) low levels of initial enrollment among Blacks and Hispanics in many fields, especially the sciences and engineering, (2) lower-than-average graduation rates and (3) low admission rates to graduate and postbaccalaureate professional fields.

Astin reported in 1985 that among entering freshmen, Blacks and Hispanics are substantially underrepresented in all fields of study except the social sciences, education, allied health (Blacks only) and business (Blacks only). Further, he noted, underrepresentation is most severe at all levels in engineering, biological sciences and the physical sciences and mathematics. He attributes this primarily to low levels of academic preparation prior to college enrollment.[9]

Engineering: There has been a concerted effort over the past 10 years to increase the representation of minorities in engineering. Currently, Blacks, Hispanics and American Indians make up approximately 5% of the baccalaureates awarded each year in the field. The American Association of Engineering Societies reported in 1987 that Black representation in engineering has grown from less than 2% of the annual awards to nearly 3%. In total recipients, this is an increase from fewer than 800 graduates annually to more than 2,000.[10]

Despite this progress, Black representation would need to grow more than four-fold to approach their group's representation in the undergraduate population.

The growth of foreign national enrollments is most apparent in the field of engineering. In 1985 more than 40% of the graduate enrollment in Ph.D.-granting institutions were foreign nationals. According to the Congressional Office of Technology Assessment, about half of these graduates will stay on to work in the United States after graduation. In its 1987 report to the U. S. Congress, the office noted the following trends in other science fields:[11]

Physics: Blacks and Hispanics combined make up 3% of employed Ph.D. physicists; Asians, 9%.

Chemistry: Blacks and Hispanics have made no gains in the field of chemistry in the past 10 years. Blacks are barely more than 2% of the bachelor's degree recipients.

Mathematics and Computer Science: Blacks represent less than 5% of employed mathematicians at all degree levels. This proportion is the same for Asians, but even smaller for Hispanics. In computer science, one of the fastest-growing fields, Blacks have made no gains (about 5% of the bachelor's degrees and less than 1% of the Ph.D.s). Hispanics receive about 3% of the computer science bachelor's degrees, while Asians have doubled their participation in the past five years to more than 5% of both bachelor's and Ph.D. computer science degrees.

Biological Sciences: Blacks represent 2% to 3% of the biological sciences work force and 1.5% of the doctorate-level employees.

Health/Medical Sciences: In this widely diverse field (e.g., pharmacology, epidemiology, public health and nursing), minorities are severely underrepresented. The National Science Foundation estimates that Blacks and Hispanics each constituted slightly over 1% of the health/medical science work force in 1986. In contrast, foreign citizens on temporary visas received 13% of the health science Ph.D.s in 1985.

Agricultural Sciences: Blacks, Asians and Hispanics each accounted for only 2% of the work force in 1983. In 1985, 10 Hispanics (out of 1,100) were awarded the Ph.D. in one of the agricultural science fields (e.g., agronomy, animal science, forestry).

Social and Behavioral Sciences: In such fields as psychology and economics, minority representation remains low, although higher than in the physical and biological sciences. In 1983, for example, Black economists in the work force totaled 3%, Hispanics 2%. Black economists at the Ph.D. level have fluctuated between 1% and 2% since 1973.

	YEAR OF DOCTORATE										
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Total Reporting Race/Ethnicity	25,976	26,182	25,008	23,767	23,947	23,970	24,006	23,785	23,704	23,394	22,717
American Indian	36	40	65	060	81	75	85	77	80	73	93
	0.1*	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4
Asian	286	334	339	390	428	458	465	452	492	512	515
	1.1	1.3	1.4	1.6	1.8	1.9	1.9	1.9	2.1	2.2	2.3
Black	999	1095	1116	1033	1056	1032	1013	1047	921	953	909
	3.8	4.2	4.5	4.3	4.4	4.3	4.2	4.4	3.9	4.1	4.0
Hispanic	303	340	423	473	462	412	464	535	538	535	559
	1.2	1.3	1.7	2.0	1.9	1.7	1.9	2.2	2.3	2.3	2.5
White	24,352	24,373	23,065	21,811	21,920	21,993	21,979	21,674	21,673	21,321	20,641
	93.7	93.1	92.2	91.8	91.5	91.8	91.6	91.1	91.4	91.1	90.9

TABLE 18

Race/Ethnicity of Doctorate Recipients, 1975-1985 (U.S. Citizens)

SOURCE: National Research Council, *Summary Report 1985: Doctorate Recipients From United States Universities*. National Academy Press, 1986, Table G.

*Percent of total U.S. citizenship doctorate recipients reporting racial/ethnic status.

	TOTAL U.S.		ASIANS		BLACKS		HISPANICS	
	1975	1985	1975	1985	1975	1985	1975	1985
	(in percentages)							
Physical Sciences	13.4	13.0	17.5	19.4	4.1	3.3	8.9	7.5
Engineering	6.3	5.4	21.3	17.5	1.1	2.1	5.0	2.9
Life Sciences	14.6	19.1	18.9	24.9	5.6	7.7	12.9	13.4
Social Sciences	19.0	19.5	12.6	12.0	15.3	19.1	18.5	21.6
Humanities	16.4	12.2	10.5	8.3	8.7	7.3	21.1	17.2
Education	25.4	25.0	13.6	13.4	61.0	52.3	30.4	32.2
Professional Fields	4.9	5.8	5.6	4.5	4.2	8.1	3.3	5.2
Total*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 19

Field Selection of Minority Ph.D.s, 1975 and 1985 (U.S. Citizens)

SOURCE: National Research Council, *Summary Report 1985: Doctorate Recipients From United States Universities*. Table 1.

*Details may not add to 100% because of rounding.

THE CURRENT POOL OF FACULTY CANDIDATES

If the baccalaureate degree has become the employment ticket to the private sector work force, the doctorate holds an equal status for access to faculty positions. Table 18 presents the data on the race/ethnicity of doctoral recipients over the past decade. Steady progress for the four minority groups as a whole is apparent, but this masks different experiences among minority groups. Hispanic doctorates have grown significantly since 1975, although some of this growth may be attributed to better "identification" of Hispanic students. Black doctorates peaked in the late 1970s but declined to about 900 annually. This decline comes at a time when the total number of doctorates awarded has remained constant at about 31,000 annual awards in the 1980s.[12] Blacks currently make up about 4% of the annual doctoral pool.

In contrast, the representation of Asian-Americans among doctoral recipients has grown substantially in the past 11 years to exceed this group's representation in the population. About the same number of Asian-Americans receive the doctorate each year as Hispanics, a group which is three-and-a-half times the size of the Asian population.

Table 19 displays the field selection of these doctoral graduates in 1975 and 1985. While Blacks reduced their dependence on traditionally preferred fields, a majority of Black doctorates are still awarded in education, with social sciences being the next most popular. Hispanic selection among fields of study more closely resembles that of all students, while Asians show a marked preference for the sciences and engineering.

FIELD	GRAND TOTAL	NON-RESIDENTS	U.S. CITIZENS											
			TOTAL	AMERICAN INDIAN		ASIAN		BLACK		WHITE		HISPANIC		OTHER UNKNOWN	
				NO	%	NO	%	NO	%	NO	%	NO	%	NO	%
Physical Sciences	4,531	1,064	3,281	4	1	220	6.7	41	1.2	2,856	87.0	54	1.6	106	3.2
Mathematics	689	239	418	—	0	33	7.9	7	1.7	350	83.7	12	2.9	16	3.8
Computer Science	311	89	213	—	0	17	8.0	3	1.4	177	83.1	6	2.8	10	4.7
Physics & Astronomy	1,078	289	744	1	1	37	5.0	4	.5	656	88.1	13	1.7	33	4.4
Chemistry	1,836	330	1,431	2	1	112	7.8	23	1.6	1,242	86.8	17	1.2	35	2.4
Earth, Atmosph. & Marine Science	617	117	475	1	2	21	4.4	4	.8	431	90.7	6	1.3	12	2.5
Engineering	3,165	1,413	1,594	1	1	281	17.6	34	2.1	1,188	74.5	22	1.4	68	4.3
Life Sciences	5,748	922	4,619	18	4	210	4.5	98	2.1	4,112	89.0	88	1.9	93	2.0
Biological Sciences	3,766	422	3,234	13	4	151	4.7	53	1.6	2,890	89.3	59	1.8	68	2.1
Health Sciences	724	97	572	1	2	33	5.8	23	4.0	491	85.8	14	2.4	10	1.7
Agricultural Sciences	1,258	403	813	4	5	26	3.2	22	2.7	731	89.9	15	1.8	15	1.8
Social Sciences (including Psych.)	5,720	666	4,747	17	4	118	2.5	205	4.3	4,159	87.6	134	2.8	114	2.4
Psychology	3,075	82	2,830	10	4	44	1.6	105	3.7	2,558	90.4	68	2.4	45	1.6
Humanities	3,428	264	2,998	8	3	67	2.2	75	2.5	2,664	88.9	113	3.8	71	2.4
Professional Fields	1,856	313	1,419	5	4	72	5.1	81	5.7	1,206	85.0	31	2.2	24	1.7
Business Admin.	793	169	579	2	3	47	8.1	12	2.1	503	86.9	6	1.0	9	1.6
Communications	266	48	206	1	5	4	1.9	18	8.7	176	85.4	4	1.9	3	1.5
Other Prof. Fields	797	96	634	2	3	21	3.3	51	8.0	527	83.1	21	3.3	12	1.9
Education	6,717	570	5,872	39	7	98	1.7	503	8.6	4,963	84.5	189	3.2	80	1.4
Other & Unspecified	36	2	31	1	3.2	1	3.2	3	9.7	26	83.9				

SOURCE: National Research Council *Summary Report 1985: Doctorate Recipients From United States Universities*, 1986, Table 1A.

TABLE 20

Number of Doctorate Recipients by Citizenship, Racial/ Ethnic Group and Subfield, 1985

Table 20 presents the 1985 production of graduates by major field and displays the proportional representation within the field. The limited pool available to colleges and universities to fill faculty openings with minorities is painfully clear. In the field of computer science, for example, with about 300 graduates annually, there were three Black and six Hispanic doctoral graduates.

While affirmative action goals were hampered by the lack of job growth in the 1970s and the 1980s, this may not be the case in the 1990s when a substantial number of retirements will occur among the faculty ranks. Little analysis has been done, however, on the number of potential openings and in what fields they will occur. Now would be the ideal time to undertake such an endeavor.

CHAPTER IV NOTES

1 William Julius Wilson. *The Declining Significance of Race*. Chicago, Illinois: The University of Chicago Press, 1978.

2 *Ibid*. p. 129.

3 James P. Smith. "Poverty in the Family," *The State of Black America*. New York: National Urban League, 1987, p. 108.

4 Georgia A. Persons. "Blacks in State and Local Government: Progress and Constraints," *The State of Black America, 1987*.

5 William Wilson, writing in *The Declining Significance of Race*, believes that this Black underclass is not benefiting from economic growth because of structural problems in the economy. Unlike previous generations of Blacks, the underclass of the 1970s and 1980s has unemployment rates that are high, regardless of the business cycle, and a reduced labor participation rate indicating many have given up on meaningful employment -- in short, "a sharply declining movement out of poverty" (p. 142). For further discussion of this issue the reader is referred to the National Urban League's report *The State of Black America* (New York, 1987), especially the articles by John E. Jacob, "Black American 1986: An Overview"; David Swinton, "Economic Status of Blacks, 1986"; and Andrew Billingsley, "Black Families in a Changing Society."

6 M. Beatriz Arias. "The Context of Education for Hispanic Students: An Overview," *American Journal of Education*, Vol. 95, No. 1, November 1986, p. 35.

7 Vilma Ortiz. "Generational Status, Family Background and Educational Attainment Among Hispanic Youth and Non-Hispanic White Youth," Michael A. Olivas, ed., *Latino College Students*. New York: Teachers College Press, 1986, pp. 29-46.

8 Arias. "Context of Education," pp. 30-32.

9 Astin. *Minorities*, p. 76.

10 See *Engineering Education*, April 1977, October 1978, April 1979, April 1980, April 1981, April 1982, April 1983, April 1984, May 1985, May 1986.

11 Office of Technology Assessment. *Preparing for Science and Engineering Careers: Field-Level Profiles*, a staff paper for the Science, Education and Transportation Program, January 21, 1987.

12 National Research Council, Office of Scientific and Engineering Personnel. *Summary Report, 1985: Doctorate Recipients From United States Universities*. Washington, D.C.: National Academy Press, 1986.

CHAPTER V: REKINDLING THE AMERICAN DREAM

In the decade of the sixties, the conscience of the nation was awakened once again to the disparity between its ideals and reality. First reluctantly and then enthusiastically, higher education opened its doors to large numbers of minorities who had been excluded. The evidence of that positive response abounds, especially in increasing rates of high school completion and college participation and in the special initiatives taken by the federal government, by the states and by individual institutions.

More than midway through the 1980s it is appropriate that we ask the question: How are we doing? Unfortunately, the answer must be: Not good enough. Progress toward full participation of minorities in higher education is distressingly stalled. There are large gaps which must be overcome, especially in academic preparation and retention to higher levels on the education ladder. In short, there is enough work to go around for all the partners: students and parents themselves, institutions -- especially their undergraduate faculties -- states and the federal government.

Our neglect of the federal policy issues in this study and in other companion studies by ECS and SHEEO does not reflect a conclusion that the federal government is no longer an important respondent in this area. Rather, it reflects our desire to direct recommendations at ourselves, not others. The SHEEO Task Force on Minority Student Achievement, the ECS project on Full Participation and similar studies conducted by regional compacts appropriately are addressing the questions and policy options open to the states. They have done this on the assumption that state government can and will provide leadership on this issue.[1]

This review of the trends of the past few decades suggests new directions for both states and institutions. While the goals of society may not have changed since the 1960s, the experience of the past 20 years suggests some new tactics.

Minorities cannot achieve full participation without access to institutions, but access is not enough. Successful completion of a demanding, high-quality undergraduate curriculum is the key to minority success. This is why the states must, and have, put such great emphasis on collaborative work with the schools to improve academic preparation. This is why some states, far too few, have supported substantial remedial programs at the collegiate level in order not to lose the current generation of minority students.

Higher education's initial response in the 1960s was to isolate the issue. The challenge more recently has been to deal with the problems of preparation and retention more broadly -- as a problem faced acutely by minority students but also by undergraduates in general.

Some minority groups are faring better than others midway through the 1980s. Asian-Americans as a group are showing remarkable achievement. The question unanswered is whether or not this trend will continue as new, less-prosperous East Asian populations immigrate.

Hispanics appear to be making progress at the postsecondary level, but this can be misleading. The eligible pool continues to be drastically reduced by failure to complete high school. Far and away, this group is at the greatest risk. American Indians are also at great risk. Their high school graduation rates are low, and their participation in higher education is limited, for the most part, to the undergraduate level.

Blacks, the largest of America's racial minorities, made tremendous strides in educational attainment until the mid-1970s, but this progress has slowed and may even be diminishing.

Both Blacks and Hispanics remain severely underrepresented at graduate and professional levels which are more likely to provide the greatest economic opportunities in the future -- the sciences, engineering and other professional fields. Even in teaching, a field successful in attracting these groups, minority enrollment and graduation rates are declining.

As for state and institutional responses to this issue, this and other reports suggest the need for recommitment. This recommitment does not reflect so much a slackening of effort but growth in the magnitude of the challenge. The political, demographic and economic climate of the 1980s dictates greater effort.

A MATTER OF CLASS, NOT RACE

We often confuse race and class issues in our public policy discussions. Loury believes that "it is regrettable that the focus of efforts to increase diversity on America's campuses have been almost exclusively on minority group members, and not on disadvantaged persons more generally."[2] He and other minority critics of affirmative action believe such efforts demean the accomplishments of an increasing number of minority students who "make it" without special help. This seems to be especially problematic in elite competitive schools such as Harvard and the University of Chicago. Bloom, in a provocative book entitled *The Closing of the American Mind*, expresses his views about the negative effects of affirmative action in these institutions.

> ***The worst part of all this is that Black students, most of whom avidly support this system, hate its consequences . . . . They don't like the notion that Whites are in the position to do them favors. They believe that everyone doubts their merit, their capacity for equal achievement. Their successes become questionable in their own eyes. Those who are good students fear that they are equated with those who are not, that their hard-won credentials are not credible.***[3]

The conclusion that social class remains the dominant factor, and influences college participation and success, can also be drawn from the data presented here from the longitudinal study of the high school graduating class of 1980. Whites from lower socio-economic backgrounds have the same poor participation and success rates as Blacks.[4] A 1987 analysis by Stephen Chaikind suggests that differences in college participation rates between Blacks and Whites are a matter of academic preparation and family income. In fact, Chaikind notes, lower-achieving Black high school graduates (as measured by reading scores) are more likely to enroll in a postsecondary institution than Whites with similar scores. The same holds true for comparisons among income groups.[5]

Nevertheless, in many states there remains a very close relationship between class and race. Given the reluctance of politicians in particular, and Americans generally, to discuss social class, race becomes a more acceptable factor on which to concentrate. More importantly, the courts have consistently reaffirmed the legitimacy of affirmative action progress to redress past exclusionary practices targeted at minorities. Too often, however, both states and institutions have taken a formalistic, and legalistic, approach to the minority issue in higher education. Ironically, this may serve to limit the response to the problem rather than overcome it. Institutions and states are protected from litigation; individuals gain redress and the problem of underrepresentation continues.

This need not always be the case, however. Much of the school reform movement in the South in the 1980s was directed at improving the quality of a public school system that served large numbers of minorities. Poised for economic growth, but restricted by the educational attainment of its population, the region, under the leadership of a new breed of governors, resisted the pressures to define the problem in racial terms. Instead, the governors embarked upon a broad-based reform movement which has resulted in higher standards, improved teaching and greater financial support for the schools. It was an eminently successful strategy that avoided the White backlash that often results from "minority programs." Yet minority students in many locales will be the principal beneficiaries.

Looking for evidence of commitment through programs labelled "minority" can often miss the point. The more important question for states and institutions is this: Do the programs of financial aid, academic support and general "climate" of the institution contribute to the success of minorities and other disadvantaged students? In short, are we doing all that we can do?

The challenge facing American higher education is clear. Having opened its doors to substantial numbers of minorities, it must now find a way to provide them a high-quality education. The data provided here suggest that the improvement of academic preparation is the single greatest task facing both the schools and the colleges. This, by necessity, requires a far greater commitment to remediation at the collegiate level than is now willingly accepted.

Far more difficult will be rekindling the aspirations of many youth who have given up on competing for the American dream. That's why so many of the new initiatives need to be targeted as much at individuals as institutions. The military seems to have discovered this as it sought to increase its attractiveness to minorities by appealing to their aspirations for growth and responsibility. No equivalent exists in higher education to the enormously successful "Be All That You Can Be" campaign for military recruitment -- one reason the *High School and Beyond Survey* found such high military participation among minorities.[6]

But state and educational leaders can promise too much. Much of what has been done in the past by higher education and is proposed for the future can leave a large number of the underclass untouched. "The economic and political systems in the United States," observed Black sociologist William Wilson, "have demonstrated remarkable flexibility in allowing talented Blacks to fill positions of prestige and influence at the same times that these systems have shown persistent rigidity in handling the problems of lower-class Blacks."[7]

What may be missing is not so much educational opportunity as economic opportunity. No single public action would do more to strengthen families, said Billingsley, "than a national commitment to a full-time, adequately paid, career-oriented job for every able-bodied man, woman and youth."[8] For this reason, he and others (including ECS) have been advocating a national program of youth service as part of the solution.

The *realistic* opportunity for employment and service is often a stimulus for educational attainment. This is why Dale Parnell's call for a high-quality technical curriculum tied to meaningful work-study and apprentice programs makes such good sense.[9] "Getting into college" is not a compelling reason for many high school students to work hard. Rather, Parnell, head of the American Association of Community and Junior Colleges, argues we must motivate them with the enticements of adult life -- career, family, jobs -- and build a curriculum around hands-on problems.

With fewer than one of five college-age minorities currently enrolled, public policy directed at youth must be broader than merely increasing college attendance. This suggests public initiatives that combine work and training. It also suggests that postsecondary institutions are partners, not competitors with industry, the military and other public-sector employment programs.

Higher education has taken an important and difficult challenge, made even more urgent by the changing nature of the economy and demography. The success of minorities in higher education is important to us all. For individuals, education remains the vehicle for the American dream; for the nation, the means to a more civilized, productive and just society.

CHAPTER V NOTES

1 For a full elaboration of the recommendations being made by state-based associations see "A Difference of Degrees: State Initiatives to Improve Minority Student Achievement" (Denver: SHEEO, 1987); the SREB reports on *Access to Quality Undergraduate Education* (1985) and *Black Student Enrollment: Can Declines Be Prevented?*; and the WICHE report of the Regional Policy Committee on Minorities in Higher Education (forthcoming).

2 Loury. "Dimensions of Excellence," p. 17.

3 Bloom. *Closing of the American Mind*, p. 96.

4 See Valerie Lee. *Access to Higher Education: The Experience of Blacks, Hispanics and Low Socio-economic Whites*. Washington, D.C.: American Council on Education, 1985.

5 Stephen Chaikind. *College Enrollment Patterns of Black and White Students*. Washington, D.C.: DRC, 1987 (available from Office of Educational Research and Improvement, OERI, U.S. Department of Education).

6 U.S. Department of Education, OERI. *Contractor Report. Four Years After High School: A Capsule Description of 1980 Seniors.* Washington, D.C.: U.S. Government Printing Office, 1986.

7 Wilson. *The Declining Significance of Race,* p. 22.

8 Billingsley. "Black Families," *The State of Black America,* p. 109.

9 One of the most exciting curricular developments in America are the new 2 + 2 technical programs that begin in grade 11 and continue through the first two years of college. See Dale Parnell. *The Neglected Majority.* Washington, D.C.: American Association of Community and Junior Colleges, 1985.

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